

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Amendment No. 5
to
FORM F-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Altamira Therapeutics Ltd.

(Exact Name of Registrant as Specified in Its Charter)

Not Applicable

(Translation of Registrant's Name Into English)

Bermuda

(State or Other Jurisdiction of
Incorporation or Organization)

2834

(Primary Standard Industrial
Classification Code Number)

Not Applicable

(IRS Employer
Identification No.)

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2 Church Street
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Tel: (441) 295-5950

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Agent for Service of Process Info

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President

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Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933.

Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the registration statement shall become effective on such date as the Commission, acting pursuant to such Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS

SUBJECT TO COMPLETION

DATED MARCH 22, 2023

Up to 5,714,286 Common Shares

Pre-Funded Warrants to Purchase up to 5,714,286 Common Shares

Common Warrants to Purchase up to 5,714,286 Common Shares



Altamira Therapeutics Ltd.

We are offering 5,714,286 of our common shares and common warrants (the “Common Warrants”) to purchase an aggregate of 5,714,286 of our common shares on a firm commitment basis.

We are also offering pre-funded warrants (the “Pre-Funded Warrants”) to purchase up to 5,714,286 of our common shares to those purchasers whose purchase of common shares in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common shares immediately following the consummation of this offering, in lieu of common shares that would otherwise result in such purchaser’s beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common shares. Each Pre-Funded Warrant will be exercisable for one common share. This offering also relates to the common shares issuable upon exercise of any pre-funded warrants sold in this offering. The purchase price of each Pre-Funded Warrant and accompanying Common Warrant will be equal to the public offering price per common share and accompanying Common Warrant sold in this offering minus CHF 0.01, the exercise price per common share under each Pre-Funded Warrant. The Pre-Funded Warrants are immediately exercisable and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full. Each common share and Pre-Funded Warrant is being sold together with a Common Warrant to purchase one common share at an exercise price of \$__ per share (representing 120% of the price at which a common share and accompanying Common Warrant are sold to the public in this offering). The Common Warrants will be exercisable immediately and will expire five years from the date of issuance. For each Pre-Funded Warrant we sell, the number of common shares we are offering will be decreased on a one-for-one basis. Because we will issue a Common Warrant for each common share and for each Pre-Funded Warrant to purchase one common share sold in this offering, the number of Common Warrants sold in this offering will not change as a result of a change in the mix of the common shares and Pre-Funded Warrants sold. The common shares and Pre-Funded Warrants, and the accompanying Common Warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance.

Our common shares are listed on the Nasdaq Capital Market under the symbol “CYTO.” On March 20, 2023, the last reported sale price of our common shares on the Nasdaq Capital Market was \$1.40 per common share. We have applied to list the Common Warrants on the Nasdaq Capital Market under the symbol “CYTOW.” No assurance can be given that our application will be approved or that a trading market for the Common Warrants will develop. There is currently no established trading market for the offered Pre-Funded Warrants and we do not expect one to develop. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.

The final public offering price per common share and accompanying Common Warrant and per Pre-Funded Warrant, if any, and accompanying Common Warrant, as the case may be, will be determined through negotiation between us and the representative of the underwriters, and the recent market prices used throughout this prospectus may not be indicative of the final offering price.

Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 8.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

Consent under the Exchange Control Act 1972 (and its related regulations) from the Bermuda Monetary Authority for the issue and transfer of our common shares to and between residents and non-residents of Bermuda for exchange control purposes has been obtained for so long as our common shares remain listed on an “appointed stock exchange,” which includes the Nasdaq Capital Market. In granting such consent the Bermuda Monetary Authority accepts no any responsibility for our financial soundness or the correctness of any of the statements made or opinions expressed in this prospectus.

	Per Share and Common Warrant	Per Pre-Funded Warrant and Common Warrant	Total
Public offering price	\$	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

(1) We refer you to “Underwriting” beginning on page 137 for additional information regarding underwriters’ compensation.

We have granted a 45-day option to the representative of the underwriters to purchase up to an additional 857,142 common shares (and/or Pre-Funded Warrants to purchase up to 857,142 common shares in lieu thereof), and/or Common Warrants to purchase up to 857,142 common shares from us at the public offering price, less underwriting discounts and commissions, solely to cover over-allotments, if any. The purchase price to be paid per additional common share or Pre-Funded Warrant will be equal to the public offering price of one common share or Pre-Funded Warrant, in each case less \$0.01 allocated for each Common Warrant, less the underwriting discounts and commissions, and the purchase price to be paid per additional Common Warrant will be \$0.01, less underwriting discounts and commissions.

The underwriters expect to deliver the securities to purchasers on or about _____, 2023.

ThinkEquity

Prospectus dated _____, 2023

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Unless otherwise indicated or the context otherwise requires, all references in this prospectus to “Altamira Therapeutics Ltd.,” or “Altamira,” the “Company,” “we,” “our,” “ours,” “us,” “our company” or similar terms refer to (i) Auris Medical Holding Ltd., a Bermuda company, or Auris Medical (Bermuda), the successor issuer to Auris Medical Holding AG (“Auris Medical (Switzerland)”) under Rule 12g-3(a) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), after the effective time at which Auris Medical (Switzerland) continued its corporate existence from Switzerland to Bermuda (the “Redomestication”), which occurred on March 18, 2019 and (ii) Altamira Therapeutics Ltd. after adoption of the new company name by resolution of Special General Meeting of Shareholders held on July 21, 2021. The trademarks, trade names and service marks appearing in this prospectus are property of their respective owners.

On May 1, 2019, the Company effected a one-for-twenty reverse share split (the “2019 Reverse Share Split”) of the Company’s issued and outstanding common shares. On October 25, 2022, the Company effected a one-for-twenty reverse share split (the “2022 Reverse Share Split”) of the Company’s issued and outstanding common shares. Unless indicated or the context otherwise requires, all per share amounts and numbers of common shares in this prospectus have been retrospectively adjusted for the 2019 Reverse Share Split and 2022 Reverse Share Split.

The terms “dollar,” “USD” or “\$” refer to U.S. dollars and the term “Swiss Franc” and “CHF” refer to the legal currency of Switzerland.

We have not authorized anyone to provide any information other than that contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we may have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the underwriters have not authorized any other person to provide you with different or additional information. Neither we nor the underwriters are making an offer to sell the common shares in any jurisdiction where the offer or sale is not permitted. This offering is being made in the United States and elsewhere solely on the basis of the information contained in this prospectus. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus, regardless of the time of delivery of this prospectus or any sale of the common shares. Our business, financial condition, results of operations and prospects may have changed since the date on the front cover of this prospectus.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. This summary may not contain all the information that may be important to you, and we urge you to read this entire prospectus carefully, including the “Risk Factors” section and our consolidated financial statements, including the notes thereto included elsewhere in this prospectus, before deciding to invest in our common shares.

Overview

We are a clinical-and commercial-stage biopharmaceutical company developing therapeutics that address important unmet medical needs. We are currently active in two areas: the development of RNA therapeutics for extrahepatic therapeutic targets (OligoPhore™ / SemaPhore™ platforms; AM-401 for the treatment of KRAS driven cancer, AM-411 for the treatment of rheumatoid arthritis; preclinical), and nasal sprays for protection against airborne allergens, and where approved, viruses (Bentrio®; commercial) or the treatment of vertigo (AM-125; Phase 2). We have announced our intention to reposition the Company around RNA therapeutics while exploring strategic options to either divest our non-RNA traditional businesses or partner them with one or several other companies. In particular, we have announced that we are in active discussions, including soliciting offers, for the partnering of Bentrio® for North America, Europe and other key markets and have been active in the process of selling our inner ear therapeutics assets.

Strategy

Our goal is to become a leading biomedical company focused on developing and commercializing RNA delivery technology. We believe that the use of RNA therapeutics - be it siRNA, mRNA or other types - to control the expression of disease-relevant genes holds great promise. By engaging targets that are otherwise ‘undruggable’ by small molecules and proteins, whole new avenues are expected to open up with RNA therapeutics for treating intractable diseases. However, delivering RNA therapeutics into the right cell of the right tissue has been one of the key challenges preventing their more widespread adoption so far.

So far, most RNA therapeutics have been directed at the liver using delivery platforms based on lipid nanoparticles or GalNAc, an amino sugar derivative of galactose. In contrast, delivery to non-liver (that is extrahepatic) tissues has been largely elusive so far. Our proprietary peptide polyplex platform OligoPhore™ and its equivalent SemaPhore™ can engage any type of short interfering RNA (siRNA) or messenger RNA (mRNA), respectively, in rapid self-assembly. The technology is designed to allow for systemic or local delivery of RNA payloads with efficient cellular uptake and extensive endosomal release. Importantly, it enables delivery to target tissues outside the liver, creating the potential for developing RNA-based therapies for a range of indications with substantial unmet need.

The key elements of our strategy are:

- **Demonstrate preclinical and early clinical proof of concept with OligoPhore™ in two lead indications.** Based on positive results obtained with OligoPhore™ delivering various siRNA payloads in more than ten different murine disease models, we have selected two therapeutic targets as the first indications in which we will seek to demonstrate early clinical proof of concept. With project AM-401 we are targeting KRAS driven cancer such as colorectal cancer or pancreatic cancer, and with project AM-411 we are targeting rheumatoid arthritis. There is a high unmet medical need for both of these indications.
- **Leverage OligoPhore™ / SemaPhore™ platform through partnering.** Considering the suitability of our peptide polyplex platform for multiple therapeutic indications especially in oncology and immune diseases but also elsewhere, and for various types of therapeutics nucleotides, we aim to leverage the platform through collaborations with other biopharmaceutical companies and the out-licensing of technology for specific indications (including projects AM-401 and AM-411). In this way, we intend to become a delivery platform company.
- **Focus activities on RNA delivery technology by divesting or partnering our non-RNA businesses.** As we aim to expand our activities in RNA delivery technology, we intend to dedicate our full resources and management focus on it. Although we continue to believe that our businesses in neurotology, rhinology and allergology hold great promise, we consider that the related assets should be rather developed outside our Company. Any proceeds from their divestiture or partnering shall be applied to growing the activities in RNA therapeutics.

Going Concern and Liquidity

The Company has incurred recurring losses and negative cash flows from operations since inception and it expects to generate losses from operations for the foreseeable future primarily due to research and development costs for its potential product candidates. We expect our research and development expenses to remain significant as we advance or initiate the pre-clinical and clinical development of AM-401, AM-411 or any other product candidate. We expect that our funding requirements for operations and financial obligations until the end of 2023 will amount to CHF 17 to 19 million, assuming that CHF 4.5 million under the FiveT Loan (as defined below) is converted into common shares and/or the FiveT Pre-Funded Warrant (as defined below) and FiveT Common Warrants (as defined below) upon the closing of this offering. Accordingly, we expect that we will require significant capital in addition to the net proceeds of this offering. To the extent that we will be unable to generate sufficient cash proceeds from the planned divestiture or partnering of our legacy assets or other partnering activities, we will need substantial additional financing to meet these funding requirements. These factors raise substantial doubt about the Company’s ability to continue as a going concern. The financial statements included in this prospectus have been prepared on a going concern basis, which contemplates the continuity of normal activities and realisation of assets and settlement of liabilities in the normal course of business. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

On October 21, 2022, the Company announced a process for the sale of its inner ear therapeutics legacy assets to a European family office (the “Buyer”). Under the previously announced two-stage transaction, the Buyer was to acquire for cash consideration of \$2.2 million (i) 100% of the share capital of Zilentin AG, one of Altamira’s inner ear subsidiaries, and (ii) an option to acquire all additional inner ear companies for up to \$27 million in a second step payment as well as milestone payments of up to \$55 million plus royalty payments. The Company extended the deadline date for the first step to December 30, 2022; however the Buyer was not able to secure financing and the arrangement has terminated. As the Buyer remains interested in the transaction, discussions continue, however, there can be no assurance that a transaction will be completed on the terms described or at all. The Company also continues to pursue a divestiture or partnering transaction for the inner ear assets with other parties.

We expect that we will require additional funding to complete our development programs with AM-125, AM-AM-301, AM-401 and AM-411, obtain regulatory approval for them and to commercialize our product candidates AM-125, AM-401, AM-411 or any other product candidate and to further advance the market roll-out of Bentrio[®]. If we receive regulatory approval for AM-125, AM-401 or AM-411, and if we choose not to grant any licenses to partners, we expect to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution, depending on where we choose to commercialize. Additional funds may not be available on a timely basis, on favorable terms, or at all, and such funds, if raised, may not be sufficient to enable us to continue to implement our long-term business strategy. If we are not able to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

In addition to this offering, the Company will seek to secure additional capital in the future through equity or debt financings, partnerships, collaborations, or other sources to carry out the Company’s planned development activities. If additional capital is not available when required, the Company may need to delay or curtail its operations until such funding is received. Various internal and external factors will affect whether and when the Company’s product candidates become approved for marketing and successful commercialization. The regulatory approval and market acceptance of the Company’s product candidates, length of time and cost of developing and commercializing these product candidates and/or failure of them at any stage of the approval process will materially affect the Company’s financial condition and future operations. Such matters are not within the control of the Company and thus all associated outcomes are uncertain.

We may raise additional capital through the sale of equity or convertible debt securities. In such an event, your ownership interest will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect your rights as a holder of our common shares.

Recent Developments

FiveT Loan Amendment

On February 4, 2022, the Company entered into a convertible loan agreement (the “FiveT Loan”) with FiveT Investment Management Ltd., or FiveT IM, an affiliate of FiveT Capital Holding Ltd., or FiveT, pursuant to which FiveT IM agreed to loan to the Company CHF 5,000,000, which loan bears interest at the rate of 10% per annum. On January 26, 2023 and on or before the date of this prospectus, the Company and FiveT IM entered into (or will enter into, as the case may be) amendments to the FiveT Loan (collectively, the “FiveT Loan Amendment”), which amendment (i) extends the maturity date of the FiveT Loan to March 15, 2023 (which was subsequently amended on March 9, 2023 to March 31, 2023); (ii) provides that the Company may repay amounts owed under the FiveT Loan prior to maturity with no penalty or premium; (iii) provides that in the event of a public or private offering (a “Qualifying Offering”) by the Company of common shares (other than through an equity line or at-the-market program), including this offering, the Company will make a partial repayment of the principal amount of the FiveT Loan comprised of (A) \$1,000,000 in cash and (B) newly issued common shares in an amount equaling 9.9% of the total outstanding common shares post-issuance and after giving effect to such offering, with such common shares being valued for purposes of such repayment at the offering price per common share in such offering (the “Qualifying Offering Price”), upon the closing of the offering (including any warrant coverage provided in such Qualifying Offering); and (iv) provides that upon the closing of the offering, the Company shall have the option to cause FiveT IM to convert the remaining outstanding amount of the FiveT Loan after the repayment described in (iii) above into a pre-funded warrant (the “FiveT Pre-Funded Warrant”), having an exercise price of CHF 0.01 per common share, giving FiveT IM the right to purchase a number of common shares equal to (A) the total remaining outstanding amount of the FiveT Loan divided by (B) the Qualifying Offering Price less CHF 0.01, plus warrant coverage, if any is provided in such Qualifying Offering, on the common shares underlying the FiveT Pre-Funded Warrant. The FiveT Pre-Funded Warrant will provide that until February 21, 2024, FiveT IM may cause the Company to redeem for cash all or portions of the FiveT Pre-Funded Warrant (and related warrant coverage) using up to 40% of the cash proceeds from certain out-licensing or divestiture transactions to the extent completed by the Company, with the amount of the FiveT Pre-Funded Warrant being redeemed equal to (A) the desired redemption amount divided by (B) the Qualifying Offering Price less CHF 0.01. Accordingly, upon the closing of this offering, the Company will repay in cash \$1,000,000 of the principal amount of the FiveT Loan, issue to FiveT IM 890,261 common shares, exercise its option to cause FiveT IM to convert the remaining balance of the FiveT Loan by issuing FiveT Pre-Funded Warrants to purchase an aggregate of 2,577,600 common shares and issue to FiveT IM warrants, identical to the Common Warrants (the “FiveT Common Warrants”) to purchase an aggregate of 3,467,860 common shares. The respective share amounts are based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, and assume no sale of Pre-Funded Warrants in this offering.

Equity Issuances

During the period from July 1, 2022 through March 7, 2023, we have issued an aggregate of (i) 1,234,777 common shares, for net proceeds of \$5.2 million (including 989,000 shares sold for net proceeds of \$3.4 million in early March 2023) under the A.G.P. Sales Agreement (as defined below) and (ii) 300,000 common shares, for net proceeds of \$1.6 million under the 2022 LPC Purchase Agreement (as defined below) and 2020 LPC Purchase Agreement (as defined below), collectively.

Corporate Information

We are an exempted company incorporated under the laws of Bermuda. We began our current operations in 2003. On April 22, 2014, we changed our name from Auris Medical AG to Auris Medical Holding AG and transferred our operational business to our newly incorporated subsidiary Auris Medical AG, which is now our main operating subsidiary. On March 13, 2018, we effected a corporate reorganization through the Merger into a newly formed holding company for the purpose of effecting the equivalent of a 10-1 “reverse share split.” On March 18, 2019, the Company discontinued as a Swiss company and continued existence as a Bermuda company with the name “Auris Medical Holding Ltd.” (the “Redomestication”). On July 21, 2021, we changed our name to Altamira Therapeutics Ltd. Our registered office is located at Clarendon House, 2 Church Street, Hamilton HM11, Bermuda, telephone number +1 (441) 295 5950.

We maintain a website at www.altamiratherapeutics.com where general information about us is available. Investors can obtain copies of our filings with the Securities and Exchange Commission, or the SEC or the Commission, from this site free of charge, as well as from the SEC website at www.sec.gov. We are not incorporating the contents of our website into this prospectus.

Implications of Being a Foreign Private Issuer

We currently report under the Exchange Act as a non-U.S. company with foreign private issuer, or FPI, status. For as long as we qualify as an FPI, we will continue to be exempt from certain provisions of the Exchange Act that are applicable to U.S. domestic public companies, including:

- the sections of the Exchange Act regulating the solicitation of proxies, consents or authorizations in respect of a security registered under the Exchange Act;
- the sections of the Exchange Act requiring insiders to file public reports of their stock ownership and trading activities and liability for insiders who profit from trades made in a short period of time; and
- the rules under the Exchange Act requiring the filing with the Securities and Exchange Commission, or SEC, of quarterly reports on Form 10-Q containing unaudited financial and other specified information, or current reports on Form 8-K, upon the occurrence of specified significant events.

THE OFFERING

This summary highlights information presented in greater detail elsewhere in this prospectus. This summary is not complete and does not contain all the information you should consider before investing in our common shares. You should carefully read this entire prospectus before investing in our common shares, including “Risk Factors” and our consolidated financial statements.

Common shares offered by us Up to 5,714,286 common shares (or 6,571,428 common shares if the underwriters exercise their option to purchase additional common shares in full), based on an assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023.

Pre-Funded Warrants offered by us We are also offering, in lieu of common shares, Pre-Funded Warrants to purchase up to 5,714,286 common shares (or Pre-Funded Warrants to purchase up to 6,571,428 common shares if the underwriters exercise their option to purchase additional Pre-Funded Warrants in full) to certain purchasers that would otherwise result in such purchaser’s beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common shares, based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023. Each Pre-Funded Warrant will be exercisable for one common share. This offering also relates to the common shares issuable upon exercise of any Pre-Funded Warrant sold in this offering. For each Pre-Funded Warrant that we sell, the number of common shares that we are offering will be decreased on a one-for-one basis. Because we will issue a Common Warrant for each common share and for each Pre-Funded Warrant to purchase one common share sold in this offering, the number of Common Warrants sold in this offering will not change as a result of a change in the mix of the common shares and Pre-Funded Warrants sold.

The purchase price of each Pre-Funded Warrant and accompanying Common Warrant will equal the price per common share and accompanying Common Warrant being sold to the public in this offering, minus CHF 0.01, and the exercise price of each Pre-Funded Warrant will be CHF 0.01 per common share.

The Pre-Funded Warrants will be exercisable immediately and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full. To better understand the terms of the Pre-Funded Warrants, you should carefully read the “Description of Securities We Are Offering—Pre-Funded Warrants” section of this prospectus. You should also read the form of Pre-Funded Warrant, which is filed as an exhibit to the registration statement of which this prospectus forms a part.

Common Warrants offered by us Common Warrants to purchase an aggregate of 5,714,286 common shares (or 6,571,428 common shares if the underwriters’ option to purchase additional Common Warrants is exercised in full), based on the sale of our common shares at an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on The Nasdaq Capital Market on March 20, 2023. Each common share and each Pre-Funded Warrant to purchase one common share is being sold together with a Common Warrant to purchase one common share. Each Common Warrant will have an exercise price of \$__ per common share (representing 120% of the price at which a common share and accompanying Common Warrant are sold to the public in this offering), will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. The common shares and Pre-Funded Warrants, and the accompanying Common Warrants, as the case may be, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance. This prospectus also relates to the offering of the common shares issuable upon exercise of the Common Warrants. To better understand the terms of the Common Warrants, you should carefully read the “Description of Securities We Are Offering—Common Warrants” section of this prospectus. You should also read the form of Common Warrant, which is filed as an exhibit to the registration statement of which this prospectus forms a part.

Common shares outstanding prior to this offering 3,278,248 common shares

Common shares to be outstanding immediately after the offering 8,992,534 common shares (or 9,849,676 common shares if the underwriters exercise their option to purchase additional common shares in full) based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, in each case assuming no sales of Pre-Funded Warrants offered by us, which, to the extent Pre-Funded Warrants are sold, will reduce the number of common shares that we are offering on a one-for-one basis, and none of the Common Warrants issued in this offering are exercised.

Nasdaq Capital Market symbol and trading Our common shares are listed on the Nasdaq Capital Market under the symbol “CYTO.” We have applied to list the Common Warrants on the Nasdaq Capital Market under the symbol “CYTOW.” No assurance can be given that our application will be approved or that a trading market for the Common Warrants will develop.

We do not intend to list the Pre-Funded Warrants on the Nasdaq Capital Market or any other national securities exchange or nationally recognized trading system. Without an active trading market, the liquidity of the Pre-Funded Warrants will be limited.

Over-Allotment Option We have granted the underwriters an option for a period of 45 days from the date of this prospectus to purchase up to an additional 857,142 common shares (and/or Pre-Funded Warrants to purchase up to 857,142 common shares in lieu thereof), and/or Common Warrants to purchase up to 857,142 common shares from us at the public offering price, less the underwriting discount based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023. The purchase price to be paid per additional common share or Pre-Funded Warrant will be equal to the public offering price of one common share or Pre-Funded Warrant, in each case less \$0.01 allocated for each Common Warrant, less the underwriting discounts and commissions, and the purchase price to be paid per additional Common Warrant will be \$0.01, less underwriting discounts and commissions.

Use of proceeds We estimate that the net proceeds to us from this offering will be approximately \$7.0 million or approximately \$8.1 million if the underwriters exercise their over-allotment option in full, at an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023 as set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. The public offering price per share will be determined between us, the underwriters and investors based on market conditions at the time of pricing and may be at a discount to the current market price of our common shares. We intend to use the net proceeds from the issuance of the common shares for the repayment of USD 1 million under the FiveT Loan and the remaining net proceeds for research and development, working capital and general corporate purposes. See “Use of Proceeds.”

Risk factors An investment in our securities involves a high degree of risk. Please refer to “Risk Factors” in this prospectus and under “Item 3. Key Information - D. Risk factors” in our most recent Annual Report on Form 20-F, and other information included in this prospectus for a discussion of factors you should carefully consider before investing in our securities.

The number of our common shares issued and outstanding after this offering includes 890,261 assumed common shares being issued to FiveT upon the closing of this offering (based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, and assuming no sale of Pre-Funded Warrants in this offering) for partial repayment pursuant to the FiveT Loan Amendment, plus 2,387,987 common shares outstanding as of March 7, 2023, which number excludes, as of such date:

- 157,730 of our common shares issuable upon the exercise of options, at a weighted average exercise price of \$20.84 per common share;
- 99,171 common shares issuable upon exercise of warrants, at a weighted average exercise price of \$57.60 per common share; and
- 890,261 common shares, plus an additional 2,577,600 common shares issuable upon exercise of the FiveT Pre-Funded Warrant, at an exercise price of CHF 0.01 per common share, and an additional 3,467,860 common shares issuable upon exercise of the FiveT Common Warrants, which are identical to the Common Warrants sold to the public in this offering, such common shares and warrants expected to be issued to FiveT IM upon the closing of this offering for repayment of the remainder of the FiveT Loan, based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, and assuming no sale of Pre-Funded Warrants in this offering.

Unless otherwise indicated, all information in this prospectus reflects or assumes no exercise of the underwriters’ over-allotment option, no exercise of the Common Warrants issued in this offering and no sales of Pre-Funded Warrants.

Summary Consolidated Financial Information

You should read the following summary financial data together with our audited financial statements as of December 31, 2021 and 2020 and for the years ended December 31, 2021, 2020 and 2019 and unaudited condensed consolidated interim financial statements as of June 30, 2022 and for the six months ended June 30, 2022 and 2021 and the related notes appearing at the end of this prospectus and the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section of this prospectus.

We have derived the summary consolidated statement of financial position and summary consolidated statement of profit or loss and other comprehensive income or loss data as of and for the years ended, December 31, 2021 and December 31, 2020, respectively from our audited financial statements for the year ended December 31, 2021 appearing at the end of this prospectus, except for (1) the 2022 reverse share split and (2) certain amounts as of and for the year ended December 31, 2021 that were subsequently revised in the unaudited condensed consolidated interim financial statements for the six months ended June 30, 2022. In relation to (1), on October 25, 2022, the Company effected a one-for-twenty reverse share split (the “2022 Reverse Share Split”) of the Company’s issued and outstanding common shares. All per share amounts and numbers of common shares in this prospectus have been retrospectively adjusted to reflect the 2022 Reverse Share Split. In relation to (2), in connection with the preparation of our unaudited condensed consolidated interim financial statements for the six months ended June 30, 2022, we identified an immaterial error with regard to advance payments for research and development costs and related tax credits for the annual period ended December 31, 2021. We evaluated the error and determined that the related impact was not material to our financial statements for any prior periods, but that correction of the impact of the error would be significant to our results of operations for the six months ended June 30, 2022. Accordingly, we have revised previously reported financial information for such immaterial error. As such, the revised amounts are derived from our unaudited condensed consolidated interim financial statements for the six months ended June 30, 2022. Please refer to the reconciliation for the previously reported amounts as of and for the year ended December 31, 2021 (as reported in the audited financial statements) to the revised amounts as of and for the year ended December 31, 2021 (as reported in the unaudited condensed consolidated interim financial statements) in the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” section of this prospectus under “Reconciliation for Previously Reported Amounts.” Additional information related to the revision of the December 31, 2021 amounts is included in Note 8 of the unaudited condensed interim financial statements for the six months ended June 30, 2022.

We have derived the summary consolidated statement of financial position as of June 30, 2022 and summary consolidated statement of operations data for the six months ended June 30, 2022 and June 30, 2021, from our unaudited condensed consolidated interim financial statements for the six months ended June 30, 2022 appearing at the end of this prospectus. Our historical results are not necessarily indicative of results that should be expected in any future period. All amounts listed are in CHF.

The pro forma and pro forma as adjusted data included in the summary consolidated statement of financial position data as of June 30, 2022 is unaudited. You should read this data together with our unaudited condensed consolidated interim financial statements for the six months ended June 30, 2022 appearing at the end of this prospectus and the information under the caption “Capitalization” in this prospectus.

	Six Months Ended June 30,		Year Ended December 31,	
	2022	2021	2021	2020
	(in CHF)		(in CHF)	
Summary Consolidated Statement of Operations Data:				
Revenue	1,222,998	-	63,882	-
Cost of sales	(1,192,232)	-	(2,240,554)	-
Gross profit	30,766	-	(2,176,672)	-
Research and development	(3,563,883)	(3,393,710)	(8,360,821)	(2,862,979)
Sales and marketing	(2,129,881)	-	(1,498,218)	-
General and administrative	(2,076,383)	(3,062,199)	(4,946,576)	(2,594,662)
Operating loss	(7,483,561)	(6,455,909)	(16,768,070)	(5,283,166)
Net loss attributable to owners of the Company	(7,306,318)	(6,754,579)	(17,058,443)	(8,200,165)
Basic and diluted loss per share	(9.43)	(10.85)	(25.76)	(27.27)

The table below sets forth Summary Consolidated Statement of Financial Position Data as of June 30, 2022:

- on an actual basis;
- on a pro forma basis to give effect to (i) the issuance and sale of an aggregate of 1,234,777 common shares for net proceeds of \$5.2 million under the A.G.P. Sales Agreement subsequent to June 30, 2022 and through March 7, 2023, (ii) the issuance and sale of an aggregate of 300,000 common shares for net proceeds of \$1.6 million under the 2022 LPC Purchase Agreement and 2020 LPC Purchase Agreement subsequent to June 30, 2022 and through March 7, 2023, (iii) the borrowing of an aggregate of CHF 600,000 principal amount under the September 2022 Loan Agreement (as defined below), (iv) the borrowing of an aggregate of CHF 350,000 principal amount under the December 2022 Loan Agreements (as defined below) and (v) pursuant to the FiveT Loan Amendment, the payment of USD 1,000,000, the issuance of an assumed 890,261 common shares and the issuance of an assumed 2,577,600 common shares assuming the full exercise of the FiveT Pre-Funded Warrant, at an exercise price of CHF 0.01 per common share, expected to be issued to FiveT IM upon the closing of this offering for repayment of the FiveT Loan, and its accrued interest through March 28, 2023, together with the issuance of the FiveT Common Warrants to purchase 3,467,860 common shares, based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, assuming no sale of Pre-Funded Warrants in this offering; and
- on a pro forma as adjusted basis to give effect to our issuance and sale of 5,714,286 common shares and accompanying Common Warrants to purchase an aggregate of 5,714,286 common shares in this offering (assuming no sale of Pre-Funded Warrants), at the assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023, after deducting underwriting discounts and commissions and estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of the Common Warrants issued in this offering.

The exercise price for the Common Warrants and FiveT Common Warrants is denominated in USD, which results in a variable amount of cash when converted into the company's functional currency, CHF. As such, the Common Warrants and FiveT Common Warrants are classified as a derivative financial liability under International Financial Accounting Standards (IFRS). Upon issuance and sale of the common shares and accompanying Common Warrants and issuance of the FiveT Common Warrants, the Company will be required to give accounting recognition to such instruments by determining the value of the Common Warrants and FiveT Common Warrants to be recognized as a derivative financial liability at that point and deducting such amount from the net proceeds (or, in the case of the FiveT Common Warrants, from the increase in Share Capital and Share Premium resulting from the expected conversion of the FiveT Loan into common shares, the FiveT Pre-Funded Warrant and the FiveT Common Warrants) to determine the amount of Share Capital and Share Premium to recognize for the common shares. As such, a portion of the proceeds (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants) will be recognized as a liability for the Common Warrants and FiveT Common Warrants, and a portion will be recognized as equity (split between Share Capital and Share Premium for the nominal value and remaining excess over nominal value, respectively). Thereafter, the derivative financial liability for the Common Warrants and FiveT Common Warrants will continue to be recognized at fair value through profit and loss until exercised. For purposes of the table below, because the amount to be attributed to the Common Warrants and FiveT Common Warrants has not yet been determined, the full amount of net proceeds (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants) in excess of the nominal value of common shares has been included in the amount attributed to Shareholders' equity, rather than bifurcating the net proceeds between liabilities and equity as will be required upon issuance. Please also refer to the risk factor "The Common Warrants and FiveT Common Warrants will be accounted for as a liability, and the changes in value of such Common Warrants and FiveT Common Warrants may have a material effect on our financial results."

	As of June 30, 2022		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in CHF)		
Summary Consolidated Statement of Financial Position Data:			
Cash and cash equivalents	372,647	6,861,643	13,513,218
Working Capital	(7,862,841)	2,182,171	8,833,746
Total Assets	18,479,876	24,968,872	31,620,447
Total Liabilities	10,804,712	6,856,916	6,856,916
Shareholders' equity	7,675,164	18,111,956	24,763,531

RISK FACTORS

You should carefully consider the risks and uncertainties described below and the other information in this prospectus. Our business, financial condition or results of operations could be materially and adversely affected if any of these risks occurs, and as a result, the market price of our common shares could decline. This prospectus also contains forward-looking statements that involve risks and uncertainties. See “Cautionary Statements Regarding Forward-Looking Statements.” Our actual results could differ materially and adversely from those anticipated in these forward-looking statements as a result of certain factors.

Summary of Risk Factors

An investment in our common shares is subject to a number of risks. The following summarizes some, but not all, of these risks. Please carefully consider all of the information discussed in this section for a more thorough description of these and other risks.

- We are a drug development-stage company and have a limited operating history and a history of operating losses. We anticipate that we will continue to incur losses for the foreseeable future.
- We expect that we will need substantial additional funding before we can expect to become profitable from sales of our products. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.
- The Company has incurred recurring losses and negative cash flows from operations since inception and it expects to generate losses from operations for the foreseeable future primarily due to research and development costs for its potential product candidates. We expect our research and development expenses to remain significant as we advance or initiate the pre-clinical and clinical development of AM-401, AM-411 or any other product candidate. Accordingly, we expect that we will require significant capital in addition to the net proceeds of this offering. To the extent that we will be unable to generate sufficient cash proceeds from the planned divestiture or partnering of our legacy assets or other partnering activities, we will need substantial additional financing to meet these funding requirements. These factors raise substantial doubt about the Company’s ability to continue as a going concern.
- We are working to reposition our company around RNA therapeutics and to divest or partner our business in neurotology, rhinology and allergology. We cannot give any assurance that this repositioning will be successful and that we will be able to divest or partner our non-RNA business at attractive conditions and within a reasonable period of time.
- We have only recently started to commercialize Bentrío[®], our most advanced product, in Germany and several other European countries and by entering into distribution agreements with third parties. Bentrío[®] was cleared by the U.S. Federal Food and Drug Administration, or the FDA, as a medical device in the U.S., but has not been commercialized in the U.S. to date. The product is marketed as an “over-the-counter” (OTC) consumer healthcare product. The business of selling consumer healthcare products is highly competitive and characterized by a large number of suppliers with substantially larger resources than us. We cannot give any assurance that we will be successful in commercializing Bentrío[®] or with reasonable investments or within a reasonable time period.
- Apart from Bentrío[®], we depend entirely on the success of AM-125, AM-401 and AM-411 which are still in clinical and preclinical development, respectively. If our preclinical studies or clinical trials are unsuccessful, we do not obtain regulatory approval or we are unable to commercialize AM-125, AM-401 or AM-411, or we experience significant delays in doing so, our business, financial condition and results of operations will be materially adversely affected.
- We face risks related to health epidemics and outbreaks, including the COVID-19 “coronavirus” outbreak, which could significantly disrupt our preclinical studies and clinical trials, drug development and sales efforts.
- Clinical drug development involves a lengthy and expensive process with uncertain timelines and uncertain outcomes, and results of earlier studies and trials may not be predictive of future trial results. If clinical trials of our drug product candidates are prolonged or delayed, we may be unable to obtain required regulatory approvals, and therefore be unable to commercialize our drug product candidates on a timely basis or at all.
- If serious adverse, undesirable or unacceptable side effects are identified during the development of our product candidates or following approval, if any, we may need to abandon our development of such product candidates, the commercial profile of any approved label may be limited, or we may be subject to other significant negative consequences following marketing approval, if any.
- We depend on enrollment of patients in our clinical trials for our product candidates. If we are unable to enroll patients in our clinical trials, our research and development efforts could be materially adversely affected.

- We may become exposed to costly and damaging liability claims, either when testing our product candidates in the clinic or at the commercial stage; and our product liability insurance may not cover all damages from such claims.
- We cannot give any assurance that any of our drug product candidates will receive regulatory approval, which is necessary before they can be commercialized.
- We cannot give any assurance that Bentrío[®] can be upclassified as a Class II medical device in the EU by 2024, which is necessary to keep the product on the market under new European medical device regulations.
- Substantial additional data may need to be generated in order to obtain marketing approval for AM-125.
- Even if our product candidates obtain regulatory approval, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.
- Healthcare legislative or regulatory reform measures, including government restrictions on pricing and reimbursement, may have a negative impact on our business and results of operations.
- The successful commercialization of our product candidates will depend in part on the extent to which governmental authorities and health insurers establish adequate coverage and reimbursement levels and pricing policies.
- We may seek to form additional strategic alliances in the future with respect to our product candidates, and if we do not realize the benefits of such alliance, our business, financial condition, commercialization prospects and results of operations may be materially adversely affected.
- We rely on third parties to conduct our nonclinical and clinical trials and perform other tasks for us. If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or comply with regulatory requirements, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.
- We currently rely on third-party suppliers and other third parties for production of Bentrío[®] and our product candidates and our dependence on these third parties may impair the advancement of our research and development programs and the development of our product candidates.
- If we or our licensors are unable to obtain and maintain effective patent rights for our technologies, product candidates or any future product candidates, or if the scope of the patent rights obtained is not sufficiently broad, we may not be able to compete effectively in our markets.
- We have limited remaining authorized common shares, and, absent an increase in authorized common shares in the near future, after the offering we may be limited with respect to activities that would require additional authorized stock, such as further capital raises, strategic transactions and share-based compensation.
- Our future growth and ability to compete depends on retaining our key personnel and recruiting additional qualified personnel.
- The price of our common shares may be volatile and may fluctuate due to factors beyond our control.

Risks Related to Our Business and Industry

Most of our products are still in the development-stage and we have a limited operating history and a history of operating losses. We anticipate that we will continue to incur losses for the foreseeable future.

We are a biopharmaceutical company with most of our products still in the development stage and a limited operating history. Since inception, we have incurred significant operating losses. We incurred net losses (defined as net loss attributable to owners of the Company) of CHF 7.3 million for the six months ended June 30, 2022 and CHF 17.1 million, CHF 8.2 million and CHF 6.6 million for the years ended December 31, 2021, 2020 and 2019, respectively. As of June 30, 2022, we had an accumulated deficit of CHF 182.6 million and of CHF 175.7 million at December 31, 2021.

Our losses have resulted principally from expenses incurred in research and development of our product candidates, pre-clinical research and general and administrative expenses that are required for maintaining our business infrastructure and operating as a publicly listed company. In 2021 we started to incur sales and marketing expenses as we initiated the commercialization of Bentrío[®]. We expect to continue to incur significant operating losses in the future as we continue our research and development efforts for our product candidates in clinical development and continue with the roll-out of Bentrío[®]. In our financial year ended December 31, 2021, we incurred CHF 16.8 million in operating loss and capitalized development expenditures of our AM-125 project of CHF 2.8 million. In the six months ended June 30, 2022, we incurred CHF 7.5 million in operating loss and capitalized development expenditures of our AM-125 project of CHF 1.5 million.

To date, we have financed our operations through our initial public offering and follow-on offerings of our common shares, private placements of equity securities and short- and long-term loans.

We have only one product approved for commercialization and have generated limited revenues from product sales. Biopharmaceutical product development is a highly speculative undertaking and involves a substantial degree of risk. It may be several years, if ever, before we have another product candidate approved for commercialization and begin to generate more revenues from product sales. Our failure to become and remain profitable would decrease the value of the Company and could impair our ability to raise capital, expand our business and/or continue our operations.

We have never generated meaningful revenue from product sales and may never be profitable.

We only started to generate revenues with Bentrío[®], our first commercial product, in late 2021. Such revenues to date have not been meaningful or sufficient to support our operations. Our ability to generate meaningful revenue and achieve profitability depends on our ability to successfully commercialize Bentrío[®] through our own efforts and through our distributors and to successfully complete the development of, and obtain the marketing approvals necessary to commercialize, one or more of our other product candidates. We do not anticipate generating revenue from sales of our other product candidates unless and until we obtain regulatory approval or clearance for, and commercialize, AM-125, AM-401 and AM-411. Our ability to generate future revenue from product sales depends heavily on our success in many areas, including but not limited to:

- building customer awareness of Bentrío[®] and successful conversion into sales;
- success of our distributors in commercializing Bentrío[®] in their territories and contracting distributors for additional key markets in Europe and North America;
- completing research and clinical development of our drug product candidates and further clinical testing of Bentrío[®];
- obtaining marketing approvals for our drug product candidates, including AM-125, AM-401 or AM-411, and additional clearance or approvals for Bentrío[®], for which we will have to complete development, including the conduct of clinical trials;

- developing a sustainable and scalable manufacturing process for any approved product candidates and maintaining supply and manufacturing relationships with third parties that can conduct the process and provide adequate (in amount and quality) products to support clinical development and the market demand for our product candidates, if approved;
- launching and commercializing product candidates for which we obtain marketing approval, either directly or with a collaborator or distributor;
- obtaining market acceptance of our product candidates as viable treatment options;
- addressing any competing technological and market developments;
- identifying, assessing, acquiring and/or developing new product candidates;
- negotiating favorable terms in any collaboration, licensing, or other arrangements into which we may enter;
- maintaining, protecting, and expanding our portfolio of intellectual property rights, including patents, trade secrets, and know-how; and
- attracting, hiring, and retaining qualified personnel.

Even as we have started to commercialize Bentrio[®] in Germany and several other European markets, we anticipate incurring significant costs associated with penetrating markets and building revenues. Because of the numerous risks and uncertainties with medical device and pharmaceutical product development and commercialization, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. Our expenses could increase beyond expectations if we are required by the FDA, the European Medicines Agency (EMA), or other regulatory agencies, domestic or foreign, to change our manufacturing processes, or to perform clinical, nonclinical, or other types of trials in addition to those that we currently anticipate. In cases where we are successful in obtaining regulatory approvals to market further of our product candidates, our revenue will be dependent, in part, upon the size of the markets in the territories for which we gain regulatory approval, the accepted price for the product, the ability to obtain coverage and reimbursement at any price, and whether we own the commercial rights for that territory. If the number of our addressable patients is not as significant as we estimate, the indication approved by regulatory authorities is narrower than we expect, or the treatment population is narrowed by competition, physician choice or treatment guidelines, we may not generate significant revenue from sales of such products, even if approved. Additionally, if we are not able to generate sufficient revenue from the sale of any approved products, we may never become profitable.

We may be unable to develop and commercialize AM-125, AM-401, AM-411 or any other product candidate or we may be unable to grow revenues for Bentrio[®] to meaningful levels, and, even if we do, may never achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a semiannual or annual basis. Our failure to become and remain profitable would decrease the value of the Company and could impair our ability to raise capital, expand our business or continue our operations.

We expect that we will need substantial additional funding before we can expect to become profitable from sales of our products. If we are unable to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

We expect our research and development expenses to remain significant in connection with our ongoing roll-out with Bentrio[®] and our clinical development activities, particularly as we initiate new trials with AM-125 and Bentrio[®], and advance or initiate the pre-clinical and clinical development of AM-401, AM-411 or any other product candidate. We expect that our funding requirements for operations and financial obligations until the end of 2023 will amount to CHF 17 to 19 million, assuming that CHF 4.5 million under the FiveT Loan is converted into common shares and/or the FiveT Pre-Funded Warrant and FiveT Common Warrants upon the closing of this offering. Accordingly, we expect that we will require significant capital in addition to the net proceeds of this offering. Our assumptions may prove to be wrong, and we may have to use our capital resources sooner than we currently expect. If we are unable to raise capital when needed, we could be forced to delay, suspend, reduce or terminate our product development programs or commercialization efforts. Also, should we fail to raise sufficient funds to cover our operating expenditures for at least a 12-month period, we may no longer be considered a “going concern.” The lack of a going concern assessment may negatively affect the valuation of the Company’s investments in its subsidiaries and result in a revaluation of these holdings. The board of directors will need to consider the interests of our creditors and take appropriate action to restructure the business if it appears that we are insolvent or likely to become insolvent. Our future funding requirements will depend on many factors, including but not limited to:

- the amount of our investments in raising market awareness of and growing market penetration for Bentrio[®];

- the success of our distributors in commercializing Bentrío[®] in their territories and our ability to access additional geographies through further distributors;
- the scope, rate of progress, results and cost of our clinical trials, nonclinical testing, and other related activities;
- the cost of manufacturing clinical supplies, and establishing commercial supplies, of our product candidates and any products that we may develop;
- the number and characteristics of product candidates that we pursue;
- the cost, timing, and outcomes of regulatory approvals;
- the cost and timing of establishing sales, marketing, and distribution capabilities; and
- the terms and timing of any collaborative, licensing, and other arrangements that we may establish, including any required milestone and royalty payments thereunder.

We expect that we will require additional funding to continue our roll out of Bentrío[®] and our ongoing clinical development activities and seek to obtain regulatory approval for, and commercialize, our product candidates. If we receive regulatory approval or clearance for any of our product candidates, and if we choose to not grant any licenses to partners, we expect to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution, depending on where we choose to commercialize. We also expect to continue to incur additional costs associated with operating as a public company. Additional funds may not be available on a timely basis, on favorable terms, or at all, and such funds, if raised, may not be sufficient to enable us to continue to implement our long-term business strategy. If we are not able to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

Raising additional capital may cause dilution to our shareholders, restrict our operations or require us to relinquish rights to our intellectual property or future revenue streams.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of equity offerings, debt financings, grants, and license and development agreements in connection with any collaborations. We do not have any committed external source of funds. In the event we need to seek additional funds, we may raise additional capital through the sale of equity or convertible debt securities. In such an event, our shareholders' ownership interests will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect our shareholders' rights as holders of our common shares. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our intellectual property or future revenue streams. If we are unable to raise additional funds when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

We do not have a history of commercializing medical devices or pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability.

Our operations to date have been limited to financing and staffing the Company, developing our technology and developing our product candidates. We have not yet demonstrated an ability to successfully complete large-scale, pivotal clinical trials, obtain marketing approvals, manufacture a commercial scale product or conduct sales and marketing activities necessary for successful product commercialization. Consequently, predictions about our future success or viability may not be as accurate as they could be if we had a history of successfully developing and commercializing medical devices or pharmaceutical products.

We are working to reposition our company around RNA therapeutics and intend to divest or partner our business in neurotology, rhinology and allergology. We cannot give any assurance that this repositioning will be successful and that we will be able to divest or partner our non-RNA business at attractive conditions and within a reasonable period of time.

In June 2021, we acquired Trasir Therapeutics Inc. (“Trasir”) whose main asset is the proprietary peptide polyplex platform OligoPhore™ / SemaPhore™ that can engage any type of RNA in rapid self-assembly and is designed to allow for oligonucleotide delivery to extrahepatic tissues using systemic or local administration. We announced on that occasion our intention to strategically reposition the Company to focus on the development of RNA therapeutics while in the medium term evaluating opportunities to partner or divest its existing business in neurotology, rhinology and allergology within the next 12-18 months. Our non-RNA business comprises Bentrio® for the protection against airborne allergens and viruses, AM-125 for the treatment of vertigo, Keyzilen® (AM-101) for the treatment of acute tinnitus, Sonsuvi® (AM-111) for the treatment of acute hearing loss and certain early-stage assets such as AM-102 for the treatment of tinnitus.

Any sale process is time consuming and requires substantial management time and attention, which may have an effect on our business and results of operations.

Valuation of assets in one or several partial divestiture transactions depends on a variety of factors such as the valuation of comparable assets, interest for the type of assets and conditions on capital markets. We can provide no assurances that we will successfully sell the non-RNA business, that we will do so in accordance with our expected timeline or that we will recover the carrying value of the assets. Additionally, any decisions made regarding our deployment or use of any sales proceeds we receive in any sale involves risks and uncertainties. As a result, our decisions with respect to such proceeds may not lead to increased long-term shareholder value, or may result in a material charge to our statement of operations. If a sale of the non-RNA business at what we consider to be a reasonable price is not available, we may decide to cease efforts to sell the non-RNA business.

The purchase price and availability of certain components of Bentrio® could be affected as a result of the Russian invasion of Ukraine.

In the context of Russia’s invasion of Ukraine, oil and gas prices, which are key input factors for plastic parts such as those used for the primary packaging of Bentrio®, have increased significantly and shown high volatility. Continued escalation of political tensions, economic instability, military activity or civil hostilities in Ukraine could result in significant further price increases for such components or difficulties of our component suppliers to supply such components on a timely basis. If we are unable to pass on such price increases, or if component supplies are interrupted, our business, financial condition and results of operation could be adversely affected.

Cyber-attacks or other failures in telecommunications or information technology systems could result in information theft, data corruption and significant disruption of our business operations.

We and certain of our collaborators depend on information technology and telecommunications systems for significant aspects of operations. These information technology and telecommunications systems support a variety of functions, including clinical trial management, clinical data capture and analysis, purchasing and production planning, production, logistics, quality control, customer service and support, billing, and general and administrative activities. Information technology and telecommunications systems are vulnerable to damage from a variety of sources, including telecommunications or network failures, malicious human acts and natural disasters. If we are subjected to one or more cyber-attacks or security breaches, we would suffer financial loss. Furthermore, as use of digital technologies has increased, cyber incidents, including deliberate attacks and attempts to gain unauthorized access to computer systems and networks, have increased in frequency and sophistication and make us even more at risk. These threats pose a risk to the security of our systems and networks, the confidentiality and the availability and integrity of our data. Any disruption or loss of information technology or telecommunications systems on which critical aspects of our operations depend could have an adverse effect on business.

Risks Related to the Development and Clinical Testing of Our Product Candidates

AM-125, AM-401 and AM-411 are still in preclinical or clinical development. If our studies and trials are unsuccessful, we do not obtain regulatory approval or we are unable to commercialize AM-125, AM-401 or AM-411, or we experience significant delays in doing so, our business, financial condition and results of operations will be materially adversely affected.

We have invested a significant portion of our efforts and financial resources in the development of AM-125, which is still in clinical development, and of AM-401 and AM-411, which are still in preclinical development. Our ability to generate product revenues from these drug product candidates, which we do not expect to occur for at least the next few years, if ever, will depend heavily on successful clinical development, obtaining regulatory approval or clearance and eventual commercialization of these product candidates. The success of AM-125, AM-401 or AM-411 and our other product candidates will depend on several factors, including the following:

- completing nonclinical and clinical trials that demonstrate the efficacy and safety of our product candidates;
- receiving marketing approvals or clearance from competent regulatory authorities;
- establishing commercial manufacturing capabilities;
- launching commercial sales, marketing and distribution operations;
- acceptance of our product candidates by patients, the medical community and third-party payors;
- a continued acceptable safety profile following approval;
- competing effectively with other therapies; and
- qualifying for, maintaining, enforcing and defending our intellectual property rights and claims.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize AM-125, AM-401 or AM-411, which would materially adversely affect our business, financial condition and results of operations.

We face risks related to health epidemics and outbreaks, including the COVID-19 pandemic, which could significantly disrupt our preclinical studies and clinical trials, and therefore our receipt of necessary regulatory approvals could be delayed or prevented.

In December 2019, a novel strain of coronavirus COVID-19 was reported to have surfaced in Wuhan, China. The extent to which COVID-19 may impact our preclinical and clinical trial operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration and geographic reach of the outbreak, the severity of COVID-19, and the effectiveness of actions to contain and treat COVID-19. In particular, the COVID-19 outbreak has impacted enrollment of patients into our “TRAVERS” phase 2 trial with AM-125. Candidates for participation in this trial undergo certain types of neurosurgery, which are elective procedures. In case of increasing case numbers, the COVID-19 pandemic may impact enrolment also into our planned Phase 3 trial.

The continued spread of COVID-19 globally could otherwise adversely impact our clinical trial operations, including our ability to recruit and retain patients and principal investigators and site staff who, as healthcare providers, may have heightened exposure to COVID-19 if an outbreak occurs in their geography. Disruptions or restrictions on our ability to travel to monitor data from our clinical trials, or to conduct clinical trials, or the ability of patients enrolled in our studies to travel, or the ability of staff at study sites to travel, as well as temporary closures of our facilities or the facilities of our clinical trials partners and their contract manufacturers, would negatively impact our clinical trial activities. In addition, we rely on independent clinical investigators, contract research organizations and other third-party service providers to assist us in managing, monitoring and otherwise carrying out our preclinical studies and clinical trials, including the collection of data from our clinical trials, and the outbreak may affect their ability to devote sufficient time and resources to our programs or to travel to sites to perform work for us. Similarly, our preclinical trials could be delayed and/or disrupted by the outbreak. As a result, the expected timeline for data readouts of our preclinical studies and clinical trials and certain regulatory filings may be negatively impacted, which would adversely affect our ability to obtain regulatory approval for and to commercialize our product candidates, increase our operating expenses and have a material adverse effect on our financial results.

Clinical drug and device development involves a lengthy and expensive process with uncertain timelines and uncertain outcomes, and results of earlier studies and trials may not be predictive of future trial results. If clinical trials of our drug product or device candidates are prolonged or delayed, we may be unable to obtain required regulatory approvals, and therefore be unable to commercialize our drug product candidates on a timely basis or at all.

To obtain the requisite regulatory approvals or approvals to market and sell any of our drug product or device candidates, we must demonstrate through extensive pre-clinical studies and clinical trials that our products are safe and effective in humans. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. The results of pre-clinical studies and early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. For example, positive results generated to date in clinical trials for our product candidates do not ensure that later clinical trials will demonstrate similar results. Product candidates in later stages of clinical trials may fail to show the desired safety and efficacy traits despite having progressed through pre-clinical studies and initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Our future clinical trial results may not be successful.

Clinical trials must be conducted in accordance with FDA, EMA and comparable foreign regulatory authorities' legal requirements, regulations or guidelines, and are subject to oversight by these governmental agencies and Institutional Review Boards, or IRBs, at the medical institutions where the clinical trials are conducted. In addition, clinical trials must be conducted with supplies of our product candidates produced under applicable current good manufacturing practices (cGMP) for drug products, or quality system regulation (QSR) requirements for devices, and other requirements. We depend on medical institutions and clinical research organizations, or CROs, to conduct our clinical trials in compliance with current good clinical practice, or cGCP, standards. To the extent the CROs fail to enroll participants for our clinical trials, fail to conduct the trials to cGCP standards or are delayed for a significant time in the execution of trials, including achieving full enrollment, we may be affected by increased costs, program delays or both, which may harm our business.

To date, we have not completed all clinical trials required for the approval of AM-125, which is currently in Phase 2 clinical development. In addition, we may need to generate additional clinical data to support the approval of Benvrio[®] for protection against airborne viruses.

The completion of clinical trials for AM-125 or Benvrio[®] may be delayed, suspended or terminated as a result of many factors, including but not limited to:

- the delay or refusal of regulators or IRBs to authorize us to commence a clinical trial at a prospective trial site and changes in regulatory requirements, policies and guidelines;
- delays or failure to reach agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- delays in patient enrollment and variability in the number and types of patients available for clinical trials;
- the inability to enroll a sufficient number of patients in trials to ensure adequate statistical power to detect statistically significant treatment effects;

- negative or inconclusive results, which may require us to conduct additional pre-clinical or clinical trials or to abandon projects that we expect to be promising;
- safety or tolerability concerns could cause us to suspend or terminate a trial if we find that the participants are being exposed to unacceptable health risks;
- regulators or IRBs requiring that we or our investigators suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements or safety concerns, among others;
- lower than anticipated retention rates of patients and volunteers in clinical trials;
- our CROs or clinical trial sites failing to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all, deviating from the protocol or dropping out of a trial;
- delays relating to adding new clinical trial sites;
- difficulty in maintaining contact with patients after treatment, resulting in incomplete data;
- errors in survey design, data collection and translation;
- delays in establishing the appropriate dosage levels;
- the quality or stability of the product candidate falling below acceptable standards;
- the inability to produce or obtain sufficient quantities of the product candidate to complete clinical trials; and
- exceeding budgeted costs due to difficulty in accurately predicting costs associated with clinical trials.

Any delays in completing our clinical trials will increase our costs, slow down our development and approval process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition and prospects significantly. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our drug product candidates.

Positive or timely results from pre-clinical or early-stage trials do not ensure positive or timely results in late-stage clinical trials or product approval by the FDA, the EMA or comparable foreign regulatory authorities. Product candidates that show positive pre-clinical or early clinical results may not show sufficient safety or efficacy in later stage clinical trials and therefore may fail to obtain regulatory approvals.

Also, pre-clinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that believed their product candidates performed satisfactorily in pre-clinical studies and clinical trials have nonetheless failed to obtain marketing approval for the product candidates. The FDA, the EMA and comparable foreign regulatory authorities have substantial discretion in the approval process and in determining when or whether regulatory approval will be obtained for any of our product candidates. For example, even if we believe the data collected from clinical trials of AM-125 are promising, such data may not be sufficient to support approval by the FDA, the EMA or any other regulatory authority.

In some instances, there can be significant variability in safety and/or efficacy results between different trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, adherence to the dosing regimen and other trial protocols and the rate of dropouts among clinical trial participants.

If we are required to conduct additional clinical trials or other testing of AM-125 or Bentrío® or any other drug product candidate that we develop beyond the trials and testing that we currently contemplate, if we are unable to successfully complete clinical trials or other testing, if the results of these trials or tests are unfavorable or are only modestly favorable or if there are safety concerns associated with AM-125 our other drug product candidates, or Bentrío®, we may:

- be delayed in obtaining marketing approval;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or significant safety warnings, including boxed warnings;
- be subject to additional post-marketing testing or other requirements; or
- remove the product from the market after obtaining marketing approval.

Our product development costs will also increase if we experience delays in testing or marketing approvals or if we are required to conduct additional clinical trials or other testing of AM-125 or other drug product candidates or Bentrío® beyond the trials and testing that we currently contemplate or conduct and we may be required to obtain additional funds to complete such additional clinical trials. We cannot assure you that our clinical trials will begin as planned or be completed on schedule, if at all, or that we will not need to restructure our trials after they have begun. Significant clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do or shorten any periods during which we have the exclusive right to commercialize our product candidates, which may harm our business and results of operations. In addition, some of the factors that cause, or lead to, clinical trial delays may ultimately lead to the denial of regulatory approval of AM-125, any other drug product candidate, or Bentrío® for its intended use in protection against airborne viruses.

If serious adverse, undesirable or unacceptable side effects are identified during the development of our product candidates or following approval, if any, we may need to abandon our development of such product candidates, the commercial profile of any approved label may be limited, or we may be subject to other significant negative consequences following marketing approval, if any.

If our product candidates are associated with serious adverse, undesirable or unacceptable side effects, we may need to abandon their development or limit development to certain uses or sub-populations in which such side effects are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many compounds that initially showed promise in pre-clinical or early-stage testing have later been found to cause side effects that restricted their use and prevented further development of the compound for larger indications.

In our clinical trials of AM-125 to date, adverse events included a low number of transient and dose-dependent nasal congestion or discomfort. No treatment-related serious adverse events were observed. Occurrence of serious procedure- or treatment-related side effects could impede clinical trial enrollment and receipt of marketing approval from the FDA, the EMA and comparable foreign regulatory authorities. They could also adversely affect physician or patient acceptance of our product candidates.

Additionally, if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw approvals of such product;
- regulatory authorities may require additional warnings on the label;
- we may be required to create a medication guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients; and
- our reputation and physician or patient acceptance of our products may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved, and could significantly harm our business, results of operations and prospects.

We depend on enrollment of patients in our clinical trials for our product candidates. If we are unable to enroll patients in our clinical trials, our research and development efforts could be materially adversely affected.

Successful and timely completion of clinical trials will require that we enroll a sufficient number of patient candidates. Trials may be subject to delays as a result of patient enrollment taking longer than anticipated or patient withdrawal. Patient enrollment depends on many factors, including the size and nature of the patient population, eligibility criteria for the trial, the proximity of patients to clinical sites, the design of the clinical protocol, the availability of competing clinical trials, the availability of new drugs approved for the indication the clinical trial is investigating, and clinicians' and patients' perceptions as to the potential advantages of the drug being studied in relation to other available therapies.

The specific target population of patients and therapeutic time windows may make it difficult for us to enroll enough patients to complete our clinical trials in a timely and cost-effective manner. Delays in the completion of any clinical trial of our product candidates will increase our costs, slow down our product candidate development and approval process and delay or potentially jeopardize our ability to commence product sales and generate revenue. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

We may become exposed to costly and damaging liability claims, either when testing our product candidates in the clinic or at the commercial stage; and our product liability insurance may not cover all damages from such claims.

We are exposed to potential product liability and professional indemnity risks that are inherent in the research, development, manufacturing, marketing and use of pharmaceutical products. The current and future use of product candidates by us in clinical trials, and the sale of Bentrio[®] or any future-approved products, may expose us to liability claims. These claims might be made by patients that use the product, healthcare providers, medical device or pharmaceutical companies or others selling such products. Any claims against us, regardless of their merit, could be difficult and costly to defend and could materially adversely affect the market for our product candidates, commercial products or any prospects for commercialization of our product candidates.

Although the clinical trial process is designed to identify and assess potential side effects, it is always possible that a drug or medical device, even after regulatory approval, may exhibit unforeseen side effects. If any of our product candidates were to cause adverse side effects during clinical trials or after approval of the product candidate, we may be exposed to substantial liabilities. Physicians and patients may not comply with any warnings that identify known potential adverse effects and patients who should not use our product candidates.

We purchase liability insurance in connection with each of our clinical trials and for commercial stage products. It is possible that our liabilities could exceed our insurance coverage. However, we may not be able to maintain insurance coverage at a reasonable cost or obtain insurance coverage that will be adequate to satisfy any liability that may arise. If a successful product liability claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover such claims and our business operations could be impaired.

Should any of the events described above occur, this could have a material adverse effect on our business, financial condition and results of operations.

Due to our limited resources and access to capital, we must and have in the past decided to prioritize development of certain product candidates; these decisions may prove to have been wrong and may adversely affect our revenues.

Because we have limited resources and access to capital to fund our operations, we must decide which product candidates to pursue and the amount of resources to allocate to each. As such, our current development and commercial focus is limited to Bentrio[®], AM-125, AM-401 and AM-411 while we have deprioritized AM-201, and Keyzilen[®] and Sonsuvi[®] until we will be able to out-license or sell these programs. Our decisions concerning the allocation of research, collaboration, management and financial resources toward particular compounds, product candidates or therapeutic areas may not lead to the development of viable commercial products and may divert resources away from better opportunities. Similarly, our potential decisions to delay, terminate or collaborate with third parties in respect of certain product development programs may also prove not to be optimal and could cause us to miss valuable opportunities. If we make incorrect determinations regarding the market potential of our product candidates or misread trends in the biopharmaceutical industry our business, financial condition and results of operations could be materially adversely affected.

We have announced our intention to reposition the Company around RNA therapeutics while exploring strategic options to either divest our non-RNA traditional businesses or partner them with one or several other companies. In particular, we have announced that we are in active discussions, including soliciting offers, for the partnering of Bentrio[®] for North America, Europe and other key markets and have been active in the process of selling our inner ear therapeutics assets.

Our research and development activities could be affected or delayed as a result of possible restrictions on animal testing.

Certain laws and regulations require us to test our product candidates on animals before initiating clinical trials involving humans. Animal testing activities have been the subject of controversy and adverse publicity. Animal rights groups and other organizations and individuals have attempted to stop animal testing activities by pressing for legislation and regulation in these areas and by disrupting these activities through protests and other means. To the extent the activities of these groups are successful, our research and development activities may be interrupted, delayed or become more expensive.

Risks Related to Regulatory Approval of Our Product Candidates

We cannot give any assurance that any of our product candidates will receive regulatory approval, which is necessary before they can be commercialized.

Our future success is dependent on our ability to successfully develop, obtain regulatory approval for, and then successfully commercialize one or more product candidates. We currently have one drug product candidate, AM-125, in Phase 2 clinical development and two other product candidates, AM-401 and AM-411, in preclinical development. We are not permitted to market or promote any of our drug product candidates before we receive regulatory approval from the FDA, EMA or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates.

Although certain of our employees have prior experience with submitting marketing applications to the FDA, EMA or comparable foreign regulatory authorities, we as a company have not submitted such applications for our drug product candidates. We cannot be certain that any of our product candidates will be successful in clinical trials or receive regulatory approval. Applications for our product candidates could fail to receive regulatory approval for many reasons, including but not limited to the following:

- the FDA, EMA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;
- the population studied in the clinical program may not be sufficiently broad or representative to assure safety in the full population for which we seek approval;
- the FDA, EMA or comparable foreign regulatory authorities may disagree with our interpretation of data from nonclinical trials or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of a new drug application, or NDA, or other submission or to obtain regulatory approval in the United States or elsewhere;

- we may be unable to demonstrate to the FDA, EMA or comparable foreign regulatory authorities that a product candidate’s risk-benefit ratio for its proposed indication is acceptable;
- the FDA, EMA or other regulatory authorities may fail to approve the manufacturing processes, test procedures and specifications, or facilities of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA, EMA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

In addition, our current product candidates or any of our other future product candidates could take a significantly longer time to gain regulatory approval than expected or may never gain regulatory approval. This could delay or eliminate any potential product revenue by delaying or terminating the potential commercialization of our product candidates.

We generally plan to seek regulatory approval to commercialize our product candidates in the United States, the European Union and in additional foreign countries where we have commercial rights. To obtain regulatory approval in other countries, we must comply with numerous and varying regulatory requirements of such other countries regarding safety, efficacy, chemistry, manufacturing and controls, clinical trials, commercial sales, pricing, and distribution of our product candidates. Even if we are successful in obtaining approval in one jurisdiction, we cannot ensure that we will obtain approval in any other jurisdictions. Failure to obtain marketing authorization for our product candidates will result in our being unable to market and sell such products, which would materially adversely affect our business, financial condition and results of operations. If we fail to obtain approval in any jurisdiction, the geographic market for our product candidates could be limited. Similarly, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our product candidates.

We cannot give any assurance that Bentrio® will receive regulatory clearance in the U.S. for use in viral infection prevention or treatment, which is necessary before it can be commercialized for such indication in the U.S.

Bentrio® is a spray product designed for intranasal protection against airborne viruses or allergens.

Unless an exemption applies, any medical device that is to be marketed in the U.S. must first receive from the FDA either 510(k) clearance, by filing a 510(k) premarket notification, or premarket application (PMA) approval, after submitting a PMA. Alternatively, the device may be cleared through the de novo classification process by the FDA. In September 2021 we submitted a 510(k) application for premarket clearance of Bentrio® as a Class II device for the intended use of promoting alleviation of mild allergic symptoms triggered by the inhalation of various airborne allergens. On June 24, 2022, we received 510(k) clearance.

Bentrio® was also developed for use in the reduction of the intranasal infectious viral load following inspiration of airborne viruses such as SARS-CoV-2. The FDA did not accept that this proposed intended use could proceed on the medical device pathway. The rationale provided is that it makes a drug-like claim that would require a drug approval. Feedback received from the FDA in 2021, prior to the Bentrio 510(k) clearance, suggested that the regulatory pathway for this intended use and interpretation of mechanism of action would result in the product being regulated as a drug rather than a medical device. That interpretation by the FDA is arguable, especially in light of the subsequent 510(k) clearance for allergens. Additional work and engagement with the FDA is needed to finalize the device vs. drug regulation pathway and associated nonclinical and clinical evidence requirements. If the device pathway is deemed appropriate, but the FDA concludes there is no valid predicate device available for this intended use, we may have to submit a de novo request to the FDA. Under the de novo pathway, we would have to prove that Bentrio® provides benefit and does not present substantial risk to the patient. This standard for granting de novo is different from the comparative 510(k) standard of being “substantially equivalent” to a predicate device that is already cleared. De novo requires an independent demonstration of a reasonable assurance safety and effectiveness, as with a high-risk PMA device, albeit in a PMA-lite, moderate risk sense. Once cleared, a de novo device creates “special controls” and becomes a 510(k) predicate for future devices. This allows subsequent devices to claim the de novo device as a new 510(k) predicate which will be cleared by the FDA if the special controls are met. To grant a de novo, the FDA typically requires more testing than for a 510(k) but less than for a PMA. The review by the FDA in the de novo process is longer than the 510(k) process and requires higher fees. Any device that has been classified through the de novo process may be marketed and used as predicate for future 510(k) submissions. The FDA may also, instead of accepting a 510(k) submission, require us to submit a PMA, which is typically a much more complex, lengthy, and burdensome application than a 510(k). To support a PMA, the FDA would likely require that we conduct one or more clinical studies to demonstrate that the device is safe and effective. In some cases, such studies may be requested for a 510(k) as well. We may not be able to meet the requirements to obtain 510(k) clearance or PMA approval, in which case the FDA may not grant any necessary clearances or approvals. In addition, the FDA may place significant limitations upon the intended use of our products as a condition to a 510(k) clearance, grant of a de novo, or PMA approval. Product applications can also be denied or withdrawn due to failure to comply with regulatory requirements or the occurrence of unforeseen problems following clearance or approval. Any delays or failure to obtain FDA clearance or approval of new products we develop, any limitations imposed by the FDA on new product use, or the costs of obtaining FDA clearance or approvals could have a material adverse effect on our business, financial condition and results of operations.

The marketing and commercialization of Bentrio® in other countries is subject to varying regulatory requirements, including in some cases also the approval of certain marketing materials and messages, which are evolving over time.

Many foreign countries in which we currently commercialize or intend to market Bentrio® have regulatory bodies and restrictions similar to those of the FDA. International sales are subject to foreign government regulation, the requirements of which vary substantially from country to country. The time required to obtain approval by a foreign country may be longer or shorter than that required for FDA clearance and the requirements may differ.

In particular, marketing of medical devices in the European Union (EU) is subject to compliance with the Medical Devices Directive 93/92/EEC (MDD). A medical device may be placed on the market within the EU only if it conforms to certain “essential requirements” and bears the CE Mark. The most fundamental and essential requirement is that a medical device must be designed and manufactured in such a way that it will not compromise the clinical condition or safety of patients, or the safety and health of users and others. In addition, the device must achieve the essential performance(s) intended by the manufacturer and be designed, manufactured and packaged in a suitable manner.

Manufacturers must demonstrate that their devices conform to the relevant essential requirements through a conformity assessment procedure. The nature of the assessment depends upon the classification of the device. The classification rules are mainly based on three criteria: the length of time the device is in contact with the body, the degree of invasiveness and the extent to which the device affects the anatomy. Conformity assessment procedures for all but the lowest risk classification of device involve a notified body. Notified bodies are often private entities and are authorized or licensed to perform such assessments by government authorities. Manufacturers usually have some flexibility to select a notified body for the conformity assessment procedures for a particular class of device and to reflect their circumstances, e.g., the likelihood that the manufacturer will make frequent modifications to its products. Conformity assessment procedures require an assessment of available clinical evidence, literature data for the product and post-market experience in respect of similar products already marketed. Notified bodies also may review the manufacturer’s quality systems. If satisfied that the product conforms to the relevant essential requirements, the notified body issues a certificate of conformity, which the manufacturer uses as a basis for its own declaration of conformity and application of the CE Mark. Application of the CE Mark allows the general commercializing of a product in the EU. The product can also be subjected to local registration requirements depending on the country. We maintain CE Marking on all of our products that require such markings as well as local registrations as required.

In May 2017, the EU adopted a new Medical Devices Regulation (EU) 2017/745 (MDR), which replaced the MDD with effect from May 26, 2021. The MDR clearly envisages, among other things, stricter controls of medical devices, including strengthening of the conformity assessment procedures, increased expectations with respect to clinical data for devices and pre-market regulatory review of high-risk devices. The MDR also envisages greater control over notified bodies and their standards, increased transparency, more robust device vigilance requirements and clarification of the rules for clinical investigations. Under transitional provisions, medical devices such as Bentrio® with certificates of conformity issued under the MDD prior to May 26, 2021 may continue to be placed on the market for the remaining validity of the certificate, until May 27, 2024 at the latest. After the expiry of any applicable transitional period, only devices that have been CE marked under the MDR may be placed on the market in the EU. On February 16, 2023, the Council of the European Union and the European Parliament approved an extension of the MDR transition periods; for Class I medical devices (such as Bentrio®) an extension to May 26, 2028 was approved.

Under the MDD, Bentrio® is classified as a Class I device which does not require a notified body for the conformity assessment procedure. Under the MDR, Bentrio® will be classified as a Class II device which will require a notified body. We expect to register Bentrio® in the EU prior to the transition from the MDD to the MDR and plan to meet the requirements for conformity as Class II during the transition period. We cannot assure you that we will be able to meet the requirements for conformity for Bentrio® as Class II medical device under MDR and that we will be able to maintain the current labelling of the product. Failure to do so in a timely manner will require us to cease marketing Bentrio® in the EU until such time, if ever, that such registration is obtained.

The labelling and promotion of treatments for infectious diseases such as SARS-CoV-2 is subject to special regulations in many countries. For example, in Germany such treatments must not be marketed directly to consumers but must be presented to health care providers only. ANSM, the French National Agency for the Safety of Medicines and Health Products, requested that our indication of use for viral infections such as SARS-CoV-2 be supported by clinical data, which we initially did not have, unlike preclinical data. Therefore, in July 2022 we had to stop marketing Bentrio[®] for the viral infection indication in the EU and Switzerland and relaunched it in October 2022 solely for the allergic rhinitis indication. In other countries, Bentrio[®] is cleared for both indications. As a consequence, the access to certain markets requires substantial adaptations to packaging materials, instructions for use, labelling and marketing materials, may take much longer than usual, and the sales potential for Bentrio[®] may be substantially restrained.

Because we are developing therapies for which there is little clinical experience and, in some cases, using new endpoints, there is more risk that the outcome of our clinical trials will not be favorable. Even if the results of our trials with AM-125 are favorable, there is risk that they will not be acceptable to regulators or physicians.

To our knowledge, there are currently no drugs with proven efficacy for acute vestibular syndrome. In addition, there has been limited historical clinical trial experience generally for the development of drugs to treat this condition. Regulatory authorities in the United States and European Union have not issued definitive guidance as to how to measure the efficacy of treatments for acute vestibular syndrome, and regulators have not yet established what is required to be demonstrated in a clinical trial in order to signify a clinically meaningful result and/or obtain marketing approval.

Whereas various balance tests and questionnaires are widely used in the diagnosis and management of vertigo, there is no universally recognized definition of the clinical meaningfulness of outcomes, and regulatory authorities have not issued guidelines for demonstrating efficacy for drug-based treatments such as AM-125. Therefore, we cannot be certain that AM-125 will be approved even if it were to show statistically significant improvements in these tests.

Substantial additional data may need to be generated in order to obtain marketing approval for AM-125.

Oral betahistine has been in clinical use for several decades and is reported to be currently marketed in 115 countries world-wide. However, in the United States oral betahistine is not approved since the FDA revoked the drug product's marketing authorization in the early 1970s over issues with unsubstantiated information about some patients in the efficacy studies upon which approval had been based. Given the absence of an approved betahistine drug product in the United States and to the extent that existing data may not be deemed sufficient, the FDA may require a full development package for AM-125.

Furthermore, additional data will be required for the specific formulation of AM-125 and the intranasal administration route. Since intranasal delivery of betahistine has the potential to result in substantially higher systemic exposures as measured by concentrations in blood plasma compared to oral delivery, existing safety assessments conducted with or for the approved drug product may not be sufficient. In addition, some of these assessments were performed a long time ago and may not be in line with current regulations and guidelines. Therefore, the scope of our development program for AM-125 may ultimately not be much smaller than one for new chemical entities.

Even if our product candidates obtain regulatory approval, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

If marketing authorization is obtained for any of our product candidates, the product will remain subject to continual regulatory review and therefore authorization could be subsequently withdrawn or restricted. Any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials and surveillance to monitor the safety and efficacy of the product candidate. In addition, if the FDA or a comparable foreign regulatory authority approves any of our product candidates, we will be subject to ongoing regulatory obligations and oversight by regulatory authorities, including with respect to the manufacturing processes, labeling, packing, distribution, adverse event reporting, storage, advertising and marketing restrictions, and recordkeeping and, potentially, other post-marketing obligations, all of which may result in significant expense and limit our ability to commercialize such products. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with cGMPs, cGDPs and cGCPs for any clinical trials that we conduct post-approval. In the European Union, the marketing authorization holder has to operate a pharmacovigilance system which conforms with and is equivalent to the respective Member State's pharmacovigilance system, requiring the holder to evaluate all information scientifically, to consider options for risk minimization and prevention and to take appropriate measures as necessary. As part of this system, we will have to, inter alia, have a qualified person responsible for pharmacovigilance, maintain a pharmacovigilance system master file, operate a risk management system for each medicinal product, monitor the outcome of risk minimization measures, and update continuously all pharmacovigilance data to update the risk assessment.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with our third-party manufacturers or manufacturing processes, or failure to comply with regulatory requirements, may result in, among other things:

- restrictions on the marketing or manufacturing of the product, withdrawal of the product from the market, or voluntary or mandatory product recalls;
- fines, warning letters or holds on clinical trials;
- refusal by the FDA to approve pending applications or supplements to approved applications filed by us, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; and
- injunctions or the imposition of civil or criminal penalties.

If any of these events occurs, our ability to sell such drug product may be impaired, and we may incur substantial additional expense to comply with regulatory requirements, which could materially adversely affect our business, financial condition and results of operations. The FDA's or any other regulatory authority's policies may change and additional government regulations may be enacted that could prevent, limit or delay regulatory approval of our product candidates. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects and ability to achieve or sustain profitability.

Healthcare legislative or regulatory reform measures, including government restrictions on pricing and reimbursement, may have a negative impact on our business and results of operations.

In the United States and some foreign jurisdictions, there have been, and continue to be, several legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect our ability to profitably sell any product candidates for which we obtain marketing approval.

Among policy makers and payors in the United States and elsewhere, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives. For example, in the United States, the Patient Protection and Affordable Care Act of 2010 ("ACA") substantially changed the way healthcare is financed by both the government and private insurers, and significantly affects the pharmaceutical industry. Many provisions of the ACA impact the biopharmaceutical industry, including that in order for a biopharmaceutical product to receive federal reimbursement under the Medicare Part B and Medicaid programs or to be sold directly to U.S. government agencies, the manufacturer must extend discounts to entities eligible to participate in the drug pricing program under the Public Health Services Act, or PHS. Since its enactment, there have been judicial and Congressional challenges and amendments to certain aspects of the ACA. There is continued uncertainty about the implementation of the ACA, including the potential for further amendments to the ACA and legal challenges to or efforts to repeal the ACA.

Additionally, there has been heightened governmental scrutiny in the United States of pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the now-departed Trump administration proposed numerous prescription drug cost control measures. Similarly, the new Biden administration has made lowering prescription drug prices one of its priorities. The Biden administration has not yet proposed any specific plans, but we expect that these will be forthcoming in the near term. At the state level, legislatures are increasingly passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. Other examples of proposed changes include, but are not limited to, expanding post-approval requirements, changing the Orphan Drug Act, and restricting sales and promotional activities for pharmaceutical products.

We cannot be sure whether additional legislative changes will be enacted, or whether government regulations, guidance or interpretations will be changed, or what the impact of such changes would be on the marketing approvals, sales, pricing, or reimbursement of our drug candidates or products, if any, may be. We expect that these and other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved drug. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability, or commercialize our drugs.

In addition, FDA regulations and guidance may be revised or reinterpreted by the FDA in ways that may significantly affect our business and our products. Any new regulations or guidance, or revisions or reinterpretations of existing regulations or guidance, may impose additional costs or lengthen FDA review times for our product candidates. We cannot determine how changes in regulations, statutes, policies, or interpretations when and if issued, enacted or adopted, may affect our business in the future. Such changes could, among other things, require:

- additional clinical trials to be conducted prior to obtaining approval;
- changes to manufacturing methods;
- recalls, replacements, or discontinuance of one or more of our products; and
- additional recordkeeping.

Such changes would likely require substantial time and impose significant costs or could reduce the potential commercial value of our product candidates. In addition, delays in receipt of or failure to receive regulatory clearances or approvals for any other products would harm our business, financial condition, and results of operations.

In the European Union, a new clinical trial regulation centralizes clinical trial approval, which eliminates redundancy, but in some cases this may extend timelines for clinical trial approvals due to potentially longer wait times. The regulation requires specific consents for use of data in research which, among other measures, may increase the costs and timelines for our product development efforts. The regulation also provides an obligation for clinical trial sponsors to make summaries of all trial results, accompanied by a summary understandable to laypersons, as well as the clinical trial report publicly available in a new database. Beyond this obligation, the EMA makes available to the public all clinical trials submitted with the EMA as well as raw data results (“individual patient data”). These publication requirements can conflict with legitimate secrecy interests of the sponsors and may lead to valuable clinical trial data falling into the public domain.

Austerity measures in certain European nations may also affect the prices we are able to seek if our products are approved, as discussed below.

Both in the United States and in the European Union, legislative and regulatory proposals have been made to expand post-approval requirements and restrict sales and promotional activities for pharmaceutical products. We do not know whether additional legislative changes will be enacted, or whether the regulations, guidance or interpretations will be changed, or what the impact of such changes on the marketing approvals of our product candidates, if any, may be.

Our relationships with customers and payors are subject to applicable anti-kickback, fraud and abuse and other healthcare laws and regulations, which, if violated, would expose us to criminal sanctions, civil penalties, exclusion from government healthcare programs, contractual damages, reputational harm and diminished profits and future earnings, among other penalties.

Healthcare providers, payors and others play a primary role in the recommendation and prescription of any products for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations, primarily in the United States, that may constrain the business or financial arrangements and relationships through which we market, sell and distribute our products for which we obtain marketing approval. Restrictions under applicable U.S. healthcare laws and regulations, include the following:

- the U.S. healthcare anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made under U.S. government healthcare programs such as Medicare and Medicaid;
- the U.S. False Claims Act imposes criminal and civil penalties, including civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the U.S. government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government;
- the U.S. Health Insurance Portability and Accountability Act of 1996, or HIPAA, imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, or HITECH, imposes obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security and transmission of individually identifiable health information;
- the transparency requirements under the Health Care Reform Law require manufacturers of drugs, devices, biologics and medical supplies to report to the U.S. Department of Health and Human Services information related to payments and other transfers of value made by such manufacturers to physicians and teaching hospitals, and ownership and investment interests held by physicians or their immediate family members; and
- analogous laws and regulations, such as state anti-kickback and false claims laws, may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures.

Similar laws exist in other jurisdictions.

In the European Union, there is currently no central European anti-bribery or similar legislation. However, more and more European Union member states as well as life sciences industry associations are enacting increasingly specific anti-bribery rules for the healthcare sector which are as severe and sometimes even more severe than in the United States. Germany, for example, has recently adopted new criminal provisions dealing with granting benefits to healthcare professionals. This new law has increased the legal restrictions as well as the legal scrutiny for the collaboration and contractual relationships between the pharmaceutical industry and its customers.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available under the U.S. federal Anti-Kickback Statute, it is possible that some of our future business activities could be subject to challenge under one or more of such laws. In addition, recent health care reform legislation has strengthened these laws. For example, the Health Care Reform Law, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. Moreover, the Health Care Reform Law provides that the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal and administrative penalties, damages, fines, exclusion from U.S. government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business with are found to be not in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs.

Risks Related to Commercialization of Our Products and Product Candidates

The high level of competition in Over-the-Counter, or OTC, consumer health care, much of which comes from competitors with greater resources, could adversely affect our business, financial condition and results of operations.

The business of selling brand name consumer products in the OTC Healthcare category is highly competitive. This market includes numerous manufacturers, distributors, marketers and retailers that actively compete for consumers' business both in the United States and abroad. Many of these competitors are larger and have substantially greater resources than we do and may therefore have the ability to spend more aggressively on research and development, advertising and marketing, and to respond more effectively to changing business and economic conditions. If this were to occur, it could have a material adverse effect on our financial condition and results of operations.

We compete for consumers' attention based on a number of factors, including brand recognition, product quality, performance, value to consumers, price and product availability at the retail level. Advertising, promotion, merchandising and packaging also have a significant impact on consumer buying decisions and, as a result, on our sales. Our markets are highly sensitive to the introduction of new products, which may rapidly capture a significant share of the market. New product innovations by our competitors or our failure to develop new products or the failure of a new product launch by the Company, could have a material adverse effect on our business, financial condition and results of operations. If our advertising, marketing and promotional programs are not effective, we may be unable to grow our revenues to profitable levels or our sales may decline.

Price increases for raw materials, labor, energy, transportation costs and other manufacturer, logistics provider or distributor demands could have an adverse impact on our margins.

The costs to manufacture and distribute Bentrio[®] are subject to fluctuation based on a variety of factors. Increases in commodity raw material, packaging component prices, and labor, energy and fuel costs and other input costs could have a significant impact on our financial condition and results of operations if our third-party manufacturers, logistics providers or distributors pass along those costs to us. If we are unable to increase the price for our products to our customers or continue to achieve cost savings in a rising cost environment, any such cost increases would reduce our gross margins and could have a material adverse effect on our financial condition and results of operations. If we increase the price of Bentrio[®] in order to maintain our current gross margins for our products, such increase may adversely affect demand for, and sales of, Bentrio[®], which could have a material adverse effect on our business, financial condition and results of operations. Indeed, continental Europe has seen a significant rate of inflation during the last twelve months.

Product liability claims and product recalls and related negative publicity could adversely affect our sales and operating results.

We are dependent on consumers' perception of the safety and quality of Bentrío[®]. Negative consumer perception may arise from product liability claims and product recalls, regardless of whether such claims or recalls involve us or our product. The mere publication of information asserting concerns about the safety of our product or the ingredients used in our product could have a material adverse effect on our business and results of operations.

Product liability claims could be based on allegations that, among other things, Bentrío[®] contains contaminants, include inadequate instructions or warnings regarding their use or include inadequate warnings concerning side effects and interactions with other substances. Whether or not successful, product liability claims could result in negative publicity that could adversely affect the reputation of our brand and our business, sales and operating results. Additionally, we may be required to pay for losses or injuries purportedly caused by our products. In addition, we could be required for a variety of reasons to initiate product recalls. Any product recalls could have a material adverse effect on our business, financial condition and results of operations.

In addition, although we maintain, and require our suppliers and third party manufacturers to maintain, product liability insurance coverage, potential product liability claims may exceed the amount of insurance coverage or may be excluded under the terms of the policy, which could have a material adverse effect on our financial condition. In addition, in the future we may not be able to obtain adequate insurance coverage or we may be required to pay higher premiums and accept higher deductibles in order to secure adequate insurance coverage.

We operate in highly competitive and rapidly changing industries, which may result in others discovering, developing or commercializing competing products before or more successfully than we do.

The biopharmaceutical and pharmaceutical industries are highly competitive and subject to significant and rapid technological change. Our success is highly dependent on our ability to discover, develop and obtain marketing approval for new and innovative products on a cost-effective basis and to market them successfully. In doing so, we face and will continue to face intense competition from a variety of businesses, including large, fully integrated pharmaceutical companies, specialty pharmaceutical companies and biopharmaceutical companies, academic institutions, government agencies and other private and public research institutions in Europe, the United States and other jurisdictions. These organizations may have significantly greater resources than we do and conduct similar research, seek patent protection and establish collaborative arrangements for research, development, manufacturing and marketing of products that compete with our product candidates.

The highly competitive nature of and rapid technological changes in the biotechnology and pharmaceutical industries could render our product candidates or our technology obsolete or non-competitive. Our competitors may, among other things:

- develop and commercialize products that are safer, more effective, less expensive, or more convenient or easier to administer;
- obtain quicker regulatory approval;
- establish superior proprietary positions;
- have access to more manufacturing capacity;
- implement more effective approaches to sales and marketing; or
- form more advantageous strategic alliances.

Should any of these occur, our business, financial condition and results of operations could be materially adversely affected.

The successful commercialization of our product candidates will depend in part on the extent to which governmental authorities and health insurers establish adequate coverage and reimbursement levels and pricing policies.

The successful commercialization of any of our drug products or product candidates will depend, in part, on the extent to which coverage and reimbursement for our products or procedures using our products will be available from government and health administration authorities, private health insurers and other third-party payors. To manage healthcare costs, many governments and third-party payors increasingly scrutinize the pricing of new technologies and require greater levels of evidence of favorable clinical outcomes and cost-effectiveness before extending coverage. In light of such challenges to prices and increasing levels of evidence of the benefits and clinical outcomes of new technologies, we cannot be sure that coverage will be available for our products or product candidates that we commercialize and, if available, that the reimbursement rates will be adequate.

Third-party payors may deny coverage and reimbursement status altogether of a given drug product or cover the product but may also establish prices at levels that are too low to enable us to realize an appropriate return on our investment in product development. Because the rules and regulations regarding coverage and reimbursement change frequently, in some cases at short notice, even when there is favorable coverage and reimbursement, future changes may occur that adversely impact the favorable status. Further, the net reimbursement for drug products may be subject to additional reductions if there are changes to laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States.

The unavailability or inadequacy of third-party coverage and reimbursement could have a material adverse effect on the market acceptance of our products and product candidates and the future revenues we may expect to receive from those products. In addition, we are unable to predict what additional legislation or regulation relating to the healthcare industry or third-party coverage and reimbursement may be enacted in the future, or what effect such legislation or regulation would have on our business.

Our products may not gain market acceptance, in which case we may not be able to generate product revenues, which will materially adversely affect our business, financial condition and results of operations.

Even if the FDA, the EMA or other regulatory authority clears or approves the marketing of any product candidates that we develop, physicians, healthcare providers, patients or the medical community may not accept or use them. Efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may not be successful. If Bentrío[®] or our drug product candidates do not achieve an adequate level of acceptance, we may not generate significant product revenues or any profits from operations. The degree of market acceptance of Bentrío[®] or any of our drug product candidates that is cleared or approved for commercial sale will depend on a variety of factors, including:

- how clinicians and potential patients perceive our novel products;
- the timing of market introduction;
- the number and clinical profile of competing products;
- our ability to provide acceptable evidence of safety and efficacy;
- the prevalence and severity of any side effects;
- relative convenience and ease of administration;
- cost-effectiveness;
- patient diagnostics and screening infrastructure in each market;

- marketing and distribution support;
- availability of coverage, reimbursement and adequate payment from health maintenance organizations and other third-party payors, both public and private; and
- other potential advantages over alternative treatment methods.

If our product candidates fail to gain market acceptance, this will have a material adverse impact on our ability to generate revenues to provide a satisfactory, or any, return on our investments. Even if some products achieve market acceptance, the market may prove not to be large enough to allow us to generate significant revenues.

In addition, the potential market opportunity of Bentrío[®] and our drug product candidates are difficult to precisely estimate. Our estimates of the potential market opportunity are predicated on several key assumptions such as industry knowledge and publications, third-party research reports and other surveys. While we believe that our internal assumptions are reasonable, these assumptions involve the exercise of significant judgment on the part of our management, are inherently uncertain and the reasonableness of these assumptions could not have been assessed by an independent source in every detail. If any of the assumptions proves to be inaccurate, then the actual market for Bentrío[®] or our drug product candidates could be smaller than our estimates of the potential market opportunity. If the actual market for Bentrío[®] or our drug product candidates is smaller than we expect, or if the products fail to achieve an adequate level of acceptance by physicians, health care payors and patients, our product revenue may be limited and it may be more difficult for us to achieve or maintain profitability.

We may lack the necessary expertise, personnel and resources to successfully commercialize our products on our own or together with suitable partners.

Before Bentrío[®] we have never commercialized a product candidate. To achieve commercial success for Bentrío[®] and our drug product candidates, we will have to continue to develop our own sales, marketing and distribution organization or outsource these activities to third parties. There can be no assurance that we will be able to develop the resources or outsource these activities in a sufficient or timely manner.

Risks Related to Our Reliance on Third Parties

If we fail to maintain our current strategic relationship with Washington University, Wellesta Holdings or Nuance Pharma, our business, commercialization prospects and financial condition may be materially adversely affected.

We have an exclusive license agreement with Washington University located in St. Louis, Missouri (“WU”). Under this agreement with WU, we are given an exclusive, worldwide, royalty-bearing license (with the right to sublicense) under certain patent rights owned or controlled by WU to research, develop, make, have made, sell, offer for sale, use and import pharmaceutical products covered under such patent rights for all fields of use. Such licensed products may include drug products formulated as nanoparticles, comprising a peptide for delivery as well as a therapeutic nucleotide, for intracellular delivery. These intellectual property rights have been the basis of our research and development of AM-401 and AM-411.

A Good relationship with WU is important for our business prospects. If our relationship with WU was to deteriorate substantially or WU challenges our use of their intellectual property or our calculations of the payments we owe under our agreements, our business, financial condition, commercialization prospects and results of operations could be materially adversely affected.

We have entered into exclusive distribution and marketing agreements for Bentrío[®] with a number of partners such as Wellesta Holdings (“Wellesta”) for India and certain other Asian markets, Nuance Pharma (“Nuance”) for China and South Korea or Avernus Pharma (“Avernus”) for certain Middle East countries. Under these agreements, these distributors have the exclusive right to market and distribute Bentrío[®] for a certain period of time in their territory subject to certain conditions. In order to maintain their exclusive rights, they are required to purchase certain quantities of Bentrío[®]. Good relationships with the distributors are important for our business prospects. If our relationships with them were to deteriorate substantially, or they fail to perform adequately, our business, financial condition, commercialization prospects and results of operations could be materially adversely affected.

In particular, on March 4, 2022, we announced that we had entered into an exclusive licensing and distribution agreement for Bentrío[®] with Nuance in Chinese Mainland, Hong Kong, Macau and South Korea (the “Territory”). Under the terms of the agreement, we will initially supply Bentrío[®] to Nuance. Nuance made an upfront payment of USD 1 million (CHF 0.9 million) and may pay to Altamira development and commercial milestones of up to USD three million and up to USD 19.5 million, respectively. In a second stage, Nuance will assume local production of the product for the Territory upon certain milestones. Once Nuance assumes local production of Bentrío[®], it will pay to us a staggered royalty on net sales in the Territory at a high-single to low-double-digit percentage. The CHF 0.9 million upfront payment that we received from Nuance in March 2022 represented approximately 75% of our revenue for the six months ended June 30, 2022. To the extent that Nuance does not proceed to meet the applicable development and commercial milestones or begin local production of Bentrío[®], our revenue may decrease significantly as compared to the six months ended June 30, 2022, and our business, financial condition and results of operations could be materially adversely affected.

We may seek to form additional strategic alliances in the future with respect to Bentrío[®] or our drug product candidates, and if we do not realize the benefits of such alliance, our business, financial condition, commercialization prospects and results of operations may be materially adversely affected.

The commercialization of Bentrío[®] requires substantial cash to fund expenses and access to distribution networks, which we do not currently possess. Therefore, in addition to our relationships with Wellesta, Nuance and other distributors, we may decide to enter into strategic alliances, or create joint ventures or collaborations with further OTC consumer health companies, notably in Europe and North America for the further commercialization of Bentrío[®].

Our product development programs and the potential commercialization of our drug product candidates will require substantial additional cash to fund expenses and may require expertise, such as sales and marketing expertise, which we do not currently possess. Therefore, in addition to our relationship with WU for our AM-401 and AM-411 product candidates, for one or more of our drug product candidates, we may decide to enter into strategic alliances, or create joint ventures or collaborations with pharmaceutical or biopharmaceutical companies for the further development and potential commercialization of those product candidates.

We face significant competition in seeking appropriate collaborators. Collaborations are complex and time-consuming to negotiate and document. Any delays in entering into new strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates and reduce their competitiveness even if they reach the market. We may also be restricted under existing and future collaboration agreements from entering into strategic partnerships or collaboration agreements on certain terms with other potential collaborators. We may not be able to negotiate collaborations on acceptable terms, or at all, for any of our existing or future product candidates and programs because the potential partner may consider that our research and development pipeline is insufficiently developed to justify a collaborative effort, or that our product candidates and programs do not have the requisite potential to demonstrate safety and efficacy in the target population. If we are unsuccessful in establishing and maintaining a collaboration with respect to a particular product candidate, we may have to curtail the development of that product candidate, reduce the scope of or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of our sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense for which we have not budgeted. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we will not be able to bring our product candidates to market and generate product revenue. Even if we are successful in establishing a new strategic partnership or entering into a collaboration agreement, we cannot be certain that, following such a strategic transaction or license, we will be able to progress the development and commercialization of the applicable product candidates as envisaged, or that we will achieve the revenues that would justify such transaction, and we could be subject to the following risks, each of which may materially harm our business, commercialization prospects and financial condition:

- we may not be able to control the amount and timing of resources that the collaboration partner devotes to the product development program;
- the collaboration partner may experience financial difficulties;
- we may be required to relinquish important rights such as marketing, distribution and intellectual property rights;
- a collaboration partner could move forward with a competing product developed either independently or in collaboration with third parties, including our competitors; or
- business combinations or significant changes in a collaboration partner’s business strategy may adversely affect our willingness to complete our obligations under any arrangement.

We rely on third parties to conduct our nonclinical and clinical trials and perform other tasks for us. If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or comply with regulatory requirements, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We have relied upon and plan to continue to rely upon third-party contract research organizations, or CROs, to monitor and manage data for our ongoing nonclinical and clinical program. We rely on these parties for execution of our nonclinical and clinical studies and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our trials is conducted in accordance with the applicable protocol, legal, regulatory, and scientific standards and our reliance on the CROs does not relieve us of our regulatory responsibilities. We and our CROs and other vendors are required to comply with cGMP, cGCP, and Good Laboratory Practice, or GLP, which are regulations and guidelines enforced by the FDA, the Competent Authorities of the Member States of the EU and comparable foreign regulatory authorities for all of our product candidates in nonclinical and clinical development. Regulatory authorities enforce these regulations through periodic inspections of study sponsors, principal investigators, trial sites and other contractors. If we or any of our CROs or vendors fail to comply with applicable regulations, the data generated in our nonclinical and clinical trials may be deemed unreliable and the EMA, FDA, other regulatory authorities may require us to perform additional nonclinical and clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that all of our clinical trials comply with cGCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

If any of our relationships with these third-party CROs terminate, we may not be able to enter into arrangements with alternative CROs or do so on commercially reasonable terms. In addition, our CROs are not our employees, and except for remedies available to us under our agreements with such CROs, we cannot control whether or not they devote sufficient time and resources to our on-going nonclinical and clinical programs. If CROs do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the data they obtain is compromised due to the failure to adhere to our protocols, regulatory requirements, or for other reasons, our clinical trials may be extended, delayed, or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. CROs may also generate higher costs than anticipated. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase, and our ability to generate revenue could be delayed.

Switching or adding additional CROs involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Though we carefully manage our relationships with our CROs, there can be no assurance that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition, and prospects.

We rely on a single source for the production of Bentrio[®] and may face difficulties in case of delivery problems, delays, issues with product quality or other aspects.

Bentrio[®] is produced by a single third-party manufacturer. Our ability to retain our current manufacturing relationship is critical to our ability to deliver quality products to our customers in a timely manner. Without adequate supplies of quality merchandise, our sales would decrease materially and our business would suffer. In the event that our contract manufacturer is unable or unwilling to ship products to us in a timely manner, or is not able to increase supply as needed, we would have to identify and qualify new manufacturing relationships. Because of the unique manufacturing requirement of Bentrio[®], we may be unable to qualify new suppliers in a timely way or at the quantities, quality and price levels needed. In addition, identifying alternative manufacturers without adequate lead times may involve additional manufacturing expense, delay in production or product disadvantage in the marketplace. In general, the consequences of not securing adequate, high quality and timely supplies of merchandise would negatively impact inventory levels, which could damage our reputation and result in lost customers and sales, and could have a material adverse effect on our business, financial condition and results of operations.

We currently rely on third-party suppliers and other third parties for production of our drug product candidates and our dependence on these third parties may impair the advancement of our research and development programs and the development of our drug product candidates.

We currently rely on and expect to continue to rely on third parties, for the manufacturing and supply of chemical compounds for preclinical studies and clinical trials of our product candidates, including AM-125, AM-401 and AM-411 and others for the manufacturing and supply of the drug product candidates. For the foreseeable future, we expect to continue to rely on such third parties for the manufacture of any of our drug product candidates on a clinical or commercial scale, if any of our product candidates receives regulatory approval. Reliance on third-party providers may expose us to different risks than if we were to manufacture product candidates ourselves. The facilities used by our contract manufacturers to manufacture our drug product candidates must be approved by the FDA or other regulatory authorities pursuant to inspections that will be conducted after we submit our NDA or comparable marketing application to the FDA or other regulatory authority. Although we have auditing rights with all our manufacturing counterparties, we do not have control over a supplier's or manufacturer's compliance with these laws, regulations and applicable cGMP standards and other laws and regulations, such as those related to environmental health and safety matters. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our drug product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our drug product candidates, if approved. Any failure to achieve and maintain compliance with these laws, regulations and standards could subject us to the risk that we may have to suspend the manufacturing of our drug product candidates or that obtained approvals could be revoked, which would adversely affect our business and reputation. Furthermore, third-party providers may breach agreements they have with us because of factors beyond our control. They may also terminate or refuse to renew their agreements because of their own financial difficulties or business priorities, potentially at a time that is costly or otherwise inconvenient for us. If we were unable to find adequate replacement or another acceptable solution in time, our clinical trials could be delayed or our commercial activities could be harmed.

In addition, the fact that we are dependent on our suppliers and other third parties for the manufacture, storage and distribution of our drug product candidates means that we are subject to the risk that our product candidates and, if approved, commercial products may have manufacturing defects that we have limited ability to prevent or control. The sale of drug products containing such defects could result in recalls or regulatory enforcement action that could adversely affect our business, financial condition and results of operations.

Growth in the costs and expenses of components or raw materials may also adversely influence our business, financial condition and results of operations. Supply sources could be interrupted from time to time and, if interrupted, it is not assured that supplies could be resumed (whether in part or in whole) within a reasonable time frame and at an acceptable cost or at all.

Our current and anticipated future dependence upon others for the manufacturing of AM-125, AM-401, AM-411 and any other product candidate that we develop may adversely affect our future profit margins and our ability to commercialize any drug products that receive marketing approval on a timely and competitive basis.

Certain ingredients and the primary packaging for Bentrio[®] and our drug product candidates are currently acquired from single-source suppliers. The loss of these suppliers, or their failure to supply us with the ingredients or the primary packaging, could materially and adversely affect our business.

We do not currently, and do not expect to in the future, independently conduct manufacturing activities for Bentrio[®] and our drug product candidates, including AM-125, AM-401 and AM-411. We currently have a relationship with one supplier each, for the supply of the drug substance of AM-125, AM-401 and AM-411, the peptide for AM-401 and AM-411, and for the key component of Bentrio[®]. We do not currently have any other suppliers for the drug substance, certain other ingredients, and primary packaging of our drug product candidates and Bentrio[®] and, although we believe that there are alternate sources of supply that could satisfy our clinical and commercial requirements, and we have performed some preliminary investigations to assess this availability, we cannot assure you that identifying alternate sources and establishing relationships with such sources would not result in significant delay in the development of our drug product candidates or in significant interruptions in commercial supplies of Bentrio[®]. Additionally, we may not be able to enter into supply arrangements with alternative suppliers on commercially reasonable terms, or at all. A delay in the development of our drug product candidates, interruption in commercial supplies of Bentrio[®] or having to enter into a new agreement with a different third party on less favorable terms than we have with our current suppliers could have a material adverse impact upon our business.

Risks Related to Intellectual Property

If we or our licensors are unable to obtain and maintain effective patent rights for our technologies, commercial products, drug product candidates or any future product candidates, or if the scope of the patent rights obtained is not sufficiently broad, we may not be able to compete effectively in our markets.

We rely upon a combination of patents, trade secret protection, and confidentiality agreements to protect the intellectual property related to our technologies, commercial products and drug product candidates. Our success depends in large part on our and our licensors' ability to obtain and maintain patent and other intellectual property protection in the United States and in other countries with respect to our proprietary technology and products.

We have sought to protect our proprietary position by filing patent applications in the United States and abroad related to our novel technologies and products that are important to our business. This process is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost, in a timely manner or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we do not have the right to control the preparation, filing and prosecution of patent applications, or to maintain the patents, covering technology that we license from third parties. Therefore, these patents and applications may not be prosecuted and enforced in a manner consistent with the best interests of our business.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain and involves complex legal and factual questions for which legal principles remain unsolved. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates in the United States or in other foreign countries. Publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions remain confidential for a period of time after filing, and some remain so until issued. We cannot be certain that we were the first to file any patent application related to our product candidates, or whether we were the first to make the inventions claimed in our owned patents or pending patent applications, nor can we know whether those from whom we license patents were the first to make the inventions claimed or were the first to file. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a pending patent application. Even if patents do successfully issue, and even if such patents cover our product candidates, third parties may challenge their validity, enforceability, or scope, which may result in such patents being narrowed, found unenforceable or invalidated, which could allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third party patent rights. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for commercial products or drug product candidates, prevent others from designing around our claims or provide us with a competitive advantage. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

We, independently or together with our licensors, have filed several patent applications covering various aspects of our commercial products, drug product candidates or technologies. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patent or whether any issued patents will be found invalid and unenforceable or will be challenged by third parties. Any successful opposition to these patents or any other patents owned by or licensed to us after patent issuance could deprive us of rights necessary for the successful commercialization of our commercial products or any drug product candidates that we may develop. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate under patent protection could be reduced.

We may not have sufficient patent terms to effectively protect our products and business.

Patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after it is filed. Although various extensions may be available, the life of a patent, and the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours or otherwise provide us with a competitive advantage. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from generic medications.

While patent term extensions under supplementary protection certificates in Europe may be available to extend the patent exclusivity term for Bentrio[®] and our drug product candidates, we cannot provide any assurances that any such patent term extension will be obtained and, if so, for how long. In addition, upon issuance in the United States any patent term can be adjusted based on certain delays caused by the applicant(s) or the U.S. Patent and Trademark Office, or USPTO. For example, a patent term can be reduced based on certain delays caused by the patent applicant during patent prosecution.

While in the United States there is a possibility of obtaining market protection independent from any patent protection for up to three and five years from approval, and in the European Union one may obtain data exclusivity of eight years from approval with an additional two years of market exclusivity (which can potentially be extended by one year), there is no assurance that we can obtain such data exclusivity and market protection with respect to Bentrio[®], AM-125, AM-401, AM-411, or any of our other drug product candidates. Our issued patents and pending patent applications are expected to expire for AM-125 in 2038, for AM-401 and AM-411 in 2034 and for Bentrio[®] in 2041, prior to any patent term extensions to which we may be entitled under applicable laws.

If we are unable to maintain effective proprietary rights for our technologies, commercial products, drug product candidates or any future drug product candidates, we may not be able to compete effectively in our markets.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our product candidate discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors, and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. Moreover, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such competitor from using that technology or information to compete with us, which could harm our competitive position.

Although we expect all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, advisors, and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating such trade secrets. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all.

Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the U.S. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the U.S. and abroad. If we are unable to prevent material disclosure of the intellectual property related to our technologies to third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, financial condition and results of operations.

Third-party claims of intellectual property infringement may expose us to substantial liability or prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our ability to develop, manufacture, market and sell our commercial products or drug product candidates and use our proprietary technology without alleged or actual infringement, misappropriation, or other violation of the patents and proprietary rights of third parties. There have been many lawsuits and other proceedings involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, and reexamination proceedings before the USPTO and corresponding foreign patent offices. Numerous U.S.- and foreign-issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are marketing commercial products or developing drug product candidates. Some claimants may have substantially greater resources than we do and may be able to sustain the costs of complex intellectual property litigation to a greater degree and for longer periods of time than we could. In addition, patent holding companies that focus solely on extracting royalties and settlements by enforcing patent rights may target us. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our commercial products and drug product candidates may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture, or methods of treatment related to the use or manufacture of our commercial products or drug product candidates. Although we generally conduct certain freedom to operate search and review with respect to our product candidates, we cannot guarantee that any of our search and review is complete and thorough, nor can we be sure that we have identified each and every patent and pending application in the United States and abroad that is relevant or necessary to the commercialization of our commercial products or drug product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our commercial products or drug product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our commercial products or drug product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to continue commercialization of such commercial product or to commercialize such drug product candidate unless we obtained a license under the applicable patents, or until such patents expire or are finally determined to be invalid or unenforceable. Similarly, if any third-party patents were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture, or methods of use, the holders of any such patents may be able to block our ability to continue the commercialization of our commercial products or to develop and commercialize the applicable drug product candidate unless we obtained a license or until such patent expires or is finally determined to be invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further commercialize our commercial products or develop and commercialize one or more of our drug product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

Additional competitors could enter the market with generic versions of our products, which may result in a material decline in sales of affected products.

Under the Hatch-Waxman Act, a pharmaceutical manufacturer may file an abbreviated new drug application, or ANDA, seeking approval of a generic copy of an approved innovator product. Under the Hatch-Waxman Act, a manufacturer may also submit an NDA under section 505(b)(2) that references the FDA's prior approval of the innovator product. A 505(b)(2) NDA product may be for a new or improved version of the original innovator product. Hatch-Waxman also provides for certain periods of regulatory exclusivity, which preclude FDA approval (or in some circumstances, FDA filing and reviewing) of an ANDA, or 505(b)(2) NDA. These include, subject to certain exceptions, the period during which an FDA-approved drug is subject to orphan drug exclusivity. In addition to the benefits of regulatory exclusivity, an innovator NDA holder may have patents claiming the active ingredient, product formulation or an approved use of the drug, which would be listed with the product in the FDA publication, "Approved Drug Products with Therapeutic Equivalence Evaluations," known as the "Orange Book." If there are patents listed in the Orange Book, a generic or 505(b)(2) applicant that seeks to market its product before expiration of the patents must include in the ANDA what is known as a "Paragraph IV certification," challenging the validity or enforceability of, or claiming non-infringement of, the listed patent or patents. Notice of the certification must be given to the innovator, too, and if within 45 days of receiving notice the innovator sues to protect its patents, approval of the ANDA is stayed for 30 months, or as lengthened or shortened by the court.

Accordingly, if AM-125, AM-401 and AM-411 are approved, competitors could file ANDAs for generic versions of AM-125, AM-401 and AM-411, or 505(b)(2) NDAs that reference AM-125, AM-401 and AM-411, respectively. If there are patents listed for AM-125, AM-401 and AM-411 in the Orange Book, those ANDAs and 505(b)(2) NDAs would be required to include a certification as to each listed patent indicating whether the ANDA applicant does or does not intend to challenge the patent. We cannot predict whether any patents issuing from our pending patent applications will be eligible for listing in the Orange Book, how any generic competitor would address such patents, whether we would sue on any such patents, or the outcome of any such suit.

We may not be successful in securing or maintaining proprietary patent protection for drug products and technologies we develop or license. Moreover, if any patents that are granted and listed in the Orange Book are successfully challenged by way of a Paragraph IV certification and subsequent litigation, the affected drug product could immediately face generic competition and its sales would likely decline rapidly and materially. Should sales decline, we may have to write off a portion or all of the intangible assets associated with the affected drug product and our results of operations and cash flows could be materially and adversely affected.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. In such an event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

If we fail to comply with the obligations in our Exclusive License Agreement with WU, we could lose intellectual property rights that are important to our AM-401 and AM-411 drug product candidates and further potential drug product candidates.

Our Exclusive License Agreement with WU imposes various development, milestone payment, royalty, and other obligations on us. If we fail to comply with our obligations under the agreement and fail to cure such breach, or we are subject to a bankruptcy, WU has the right to terminate the agreement, in which event we would not be able to develop or market AM-401 or AM-411 or any future drug product candidates covered by the license.

In particular, we are required to use commercially reasonable efforts to meet the following development milestones: a) to file an IND (or regulatory equivalent in foreign jurisdiction) by June 30, 2023, b) to complete a Phase 1 clinical trial 3.5 years after achieving the first milestone, and c) to complete a Phase 2 clinical trial four years after achieving the second milestone. We may elect to extend each of these milestones once by a period of twelve months, and second time by a period of an additional twelve months, by paying WU a nonrefundable fee in the amount of \$50,000 for the first extension and \$100,000 for the second extension.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming, and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. To counter such infringement, we may be required to file claims against those competitors, which can be expensive and time-consuming. If we or one of our licensing partners were to initiate legal proceedings against a third party to enforce a patent covering one of our commercial products or drug product candidates, the defendant could counterclaim that the patent covering our commercial product or drug product candidate is invalid, overbroad and/or unenforceable, or that we infringe the defendant's patents. In patent litigation in the United States, defendant counterclaims alleging invalidity, overbreadth and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. The outcome following legal assertions of invalidity and unenforceability is unpredictable. A court may decide that a patent of ours is invalid or unenforceable, in whole or in part, construe the patent's claims narrowly or refuse to stop a third party from using the technology in question on the grounds that our patents do not cover that technology. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated or interpreted narrowly, which could adversely affect us.

Interference proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to continue the commercial roll-out of Bentrío®, our clinical trials, continue our research programs, license necessary technology from third parties, or enter into development partnerships that would help us bring our drug product candidates to market. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common shares.

We may be subject to claims that our employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We employ and utilize the services of individuals who were previously employed or provided services to universities or other biotechnology or pharmaceutical companies. Although we try to ensure that our employees, consultants, and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants, or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employee's, consultant's or independent contractor's former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Our reliance on our advisors, employees and third parties requires us to share our intellectual property and trade secrets, which increases the possibility that a competitor will discover them or that our intellectual property will be misappropriated or disclosed.

Because we rely on our advisors, employees and third-party contractors and consultants to research and develop and to manufacture our commercial products and drug product candidates, we must, at times, share our intellectual property with them. We seek to protect our intellectual property and other proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, consulting agreements or other similar agreements with our advisors, employees, third-party contractors and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of these advisors, employees and third parties to use or disclose our confidential information, including our intellectual property and trade secrets. Despite the contractual provisions employed when working with these advisors, employees and third parties, the need to share intellectual property and other confidential information increases the risk that such confidential information becomes known by our competitors, are inadvertently incorporated into the product development of others or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how, intellectual property and trade secrets, a competitor's discovery of our intellectual property or trade secrets or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business.

In addition, these agreements typically restrict the ability of our advisors, employees, third-party contractors and consultants to publish data potentially relating to our intellectual property, although our agreements may contain certain limited publication rights. For example, any academic institution that we may collaborate with in the future may expect to be granted rights to publish data arising out of such collaboration, provided that we are notified in advance and given the opportunity to delay publication for a limited time period in order for us to secure patent protection of intellectual property rights arising from the collaboration, in addition to the opportunity to remove confidential or trade secret information from any such publication. In the future, we may also conduct joint research and development programs that may require us to share intellectual property under the terms of our research and development or similar agreements. Despite our efforts to protect our intellectual property, our competitors may discover our trade secrets or know how, either through breach of our agreements with third parties, independent development or publication of information by any of our third-party collaborators. A competitor's discovery of our intellectual property would impair our competitive position and have an adverse impact on our business.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

We may be subject to claims that former employees, collaborators or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. For example, we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our drug product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship or our ownership of our patents or other intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, and defending patents in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. As part of ordinary course prosecution and maintenance activities, we determine whether to seek patent protection outside the U.S. and in which countries. This also applies to patents we have acquired or in-licensed from third parties. In some cases this means that we, or our predecessors in interest or licensors of patents within our portfolio, have sought patent protection in a limited number of countries for patents covering our product candidates. Competitors may use our technologies in jurisdictions where we have not obtained or are unable to adequately enforce patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents, the reproduction of our manufacturing or other know-how or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

In Europe, a new unitary patent system, which takes effect on June 1, 2023, may significantly impact European patents, including those granted before the introduction of the new system. Under the new system, Applicants can, upon grant of a patent, opt for that patent to become a Unitary Patent which will be subject to the jurisdiction of a new Unitary Patent Court (UPC). Patents granted before the implementation of the new system can be opted out of UPC jurisdiction, remaining as national patents in the UPC countries. Patents that remain under the jurisdiction of the UPC may be challenged in a single UPC-based revocation proceeding that, if successful, could invalidate the patent in all countries who are signatories to the UPC. Further, because the UPC is a new court system and there is no precedent for the court's laws, there is increased uncertainty regarding the outcome of any patent litigation. We are unable to predict what impact the new patent regime may have on our ability to exclude competitors in the European market. In addition to changes in patent laws, geopolitical dynamics, including Russia's recent incursion into Ukraine, may also impact our ability to obtain and enforce patents in particular jurisdictions. If we are unable to obtain and enforce patents as needed in particular markets, our ability to exclude competitors in those markets may be reduced.

Risks Related to Employee Matters and Managing Growth

Our future growth and ability to compete depends on retaining our key personnel and recruiting additional qualified personnel.

Our success depends upon the continued contributions of our key management, scientific and technical personnel, many of whom have substantial experience with or been instrumental for us and our projects. Key management includes our executive officers Thomas Meyer, our founder, Chairman and Chief Executive Officer, Covadonga Pañeda, Chief Operating Officer for our RNA delivery activities, and Marcel Gremaud, our Chief Financial Officer, who constitute the Executive Management Committee. Since January 2023, we have received the contributions of Samuel Wickline, Trasir's founder and our Chief Scientific Adviser for RNA therapeutics on a part-time consulting basis (from June 2021 to December 2022 served as Chief Scientific Officer).

All our staff are engaged in project management or general management, and we do not have any inhouse laboratories or manufacturing facilities. During the COVID-19 pandemic, all our staff worked for several time periods remotely in accordance with Swiss public health regulations or by voluntary Company decision. Overall, the remote work did not have any significant impact on our ability to manage projects or processes effectively.

The loss of key managers, senior scientists or advisors could delay our research and development activities. Laws and regulations on executive compensation, including legislation in Switzerland, may restrict our ability to attract, motivate and retain the required level of qualified personnel. In addition, the competition for qualified personnel in the biopharmaceutical and pharmaceutical field is intense, and our future success depends upon our ability to attract, retain and motivate highly skilled scientific, technical and managerial employees. We face competition for personnel from other companies, universities, public and private research institutions and other organizations. If our recruitment and retention efforts are unsuccessful in the future, it may be difficult for us to implement our business strategy, which could have a material adverse effect on our business.

We expect to expand our drug development, regulatory and business development capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs and business development. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Risks Related to Our Common Shares and Common Warrants

The price of our securities may continue to be volatile and may fluctuate due to factors beyond our control.

The share price of publicly traded emerging biopharmaceutical and drug discovery and development companies has been highly volatile and is likely to remain highly volatile in the future. For example, during the last year, our common shares have traded as high as \$43 in April 2022 and as low as \$3.95 in December 2022. The market price of our common shares and Common Warrants may fluctuate significantly in the future due to a variety of factors, including:

- delays in the commercial roll out of Bentrio®;
- commencement and enrollment of and delays in clinical trials and positive or negative results of testing and clinical trials by us, strategic partners, or competitors;
- adverse regulatory decisions, including failures to receive regulatory approval for our product candidates; ;
- delays in executing on our plans to reposition the Company around RNA therapeutics and / or to divest or partner our business in neurology, rhinology and allergology;
- technological innovations or commercial product introductions by us or competitors;
- changes in government regulations;
- adverse developments concerning our suppliers or manufacturers;
- developments concerning proprietary rights, including patents and litigation matters;
- public concern relating to the commercial value or safety of any of our product candidates;
- financing or other corporate transactions;
- fluctuations in the value of our embedded derivative securities;
- publication of research reports or comments by securities or industry analysts;
- general market conditions in the pharmaceutical industry or in the economy as a whole;
- our ability to maintain the listing of our common shares on Nasdaq; or
- other events and factors beyond our control.

Additionally, these factors may affect the liquidity of our common shares and the Common Warrants, which may hurt your ability to sell our common shares and the Common Warrants in the future. In addition, the stock market in general has recently experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of individual companies. Broad market and industry factors may materially affect the market price of companies' shares and warrants, including ours, regardless of actual operating performance.

Our securities may be involuntarily delisted from trading on The Nasdaq Capital Market if we fail to comply with the continued listing requirements. A delisting of our common shares is likely to reduce the liquidity of our common shares and may inhibit or preclude our ability to raise additional financing.

We are required to comply with certain Nasdaq continued listing requirements, including a series of financial tests relating to shareholder equity, market value of listed securities and number of market makers and shareholders. If we fail to maintain compliance with any of those requirements, our common shares could be delisted from The Nasdaq Capital Market.

In 2017, 2019, 2020 and 2022, we failed to maintain compliance with the minimum bid price requirement. To address that non-compliance, on March 13, 2018, we effected the Merger, pursuant to which we effected a “reverse share split” at a ratio of 10-for-1, and on each of May 1, 2019 and October 25, 2022, we effected a “reverse share split” at a ratio of 20-for-1. In 2020, we regained compliance as our share price increased. Additionally, on January 11, 2018, we received a letter from Nasdaq indicating that we were not in compliance with Nasdaq’s market value of listed securities requirement. As a result of the July 2018 Registered Offering, we resolved the non-compliance with the market value of listed securities requirement by complying with Nasdaq’s minimum equity standard. However, there can be no assurance that we will be able to successfully maintain compliance with the several Nasdaq continued listing requirements.

If, for any reason, Nasdaq should delist our common shares or the Common Warrants following their listing from trading on its exchange and we are unable to obtain listing on another national securities exchange or take action to restore our compliance with the Nasdaq continued listing requirements, a reduction in some or all of the following may occur, each of which could have a material adverse effect on our shareholders:

- the liquidity of our common shares;
- the market price of our common shares;
- our ability to obtain financing for the continuation of our operations;
- the number of institutional and general investors that will consider investing in our common shares;
- the number of investors in general that will consider investing in our common shares;
- the number of market makers in our common shares;
- the availability of information concerning the trading prices and volume of our common shares; and
- the number of broker-dealers willing to execute trades in shares of our common shares.

Moreover, delisting may make unavailable a tax election that could affect the U.S. federal income tax treatment of holding, and disposing of, our common shares or Pre-Funded Warrants. See “Taxation-Material U.S. Federal Income Tax Considerations for U.S. Holders” below.

In the event that our common shares and the Common Warrants are delisted from Nasdaq, U.S. broker-dealers may be discouraged from effecting transactions in our common shares because they may be considered penny stocks and thus be subject to the penny stock rules.

The SEC has adopted a number of rules to regulate “penny stock” that restrict transactions involving stock which is deemed to be penny stock. Such rules include Rules 3a51-1, 15g-1, 15g-2, 15g-3, 15g-4, 15g-5, 15g-6, 15g-7, and 15g-9 under the Securities Exchange Act of 1934 (the “Exchange Act”). These rules may have the effect of reducing the liquidity of penny stocks. “Penny stocks” generally are equity securities with a price of less than \$5.00 per share (other than securities registered on certain national securities exchanges or quoted on the Nasdaq Stock Market if current price and volume information with respect to transactions in such securities is provided by the exchange or system). Our common shares have in the past constituted, and our securities may again in the future constitute, “penny stock” within the meaning of the rules. The additional sales practice and disclosure requirements imposed upon U.S. broker-dealers may discourage such broker-dealers from effecting transactions in our common shares and the Common Warrants, which could severely limit the market liquidity of such common shares and Common Warrants and impede their sale in the secondary market.

A U.S. broker-dealer selling penny stock to anyone other than an established customer or “accredited investor” (generally, an individual with net worth in excess of \$1,000,000 or an annual income exceeding \$200,000, or \$300,000 together with his or her spouse) must make a special suitability determination for the purchaser and must receive the purchaser’s written consent to the transaction prior to sale, unless the broker-dealer or the transaction is otherwise exempt. In addition, the “penny stock” regulations require the U.S. broker-dealer to deliver, prior to any transaction involving a “penny stock”, a disclosure schedule prepared in accordance with SEC standards relating to the “penny stock” market, unless the broker-dealer or the transaction is otherwise exempt. A U.S. broker-dealer is also required to disclose commissions payable to the U.S. broker-dealer and the registered representative and current quotations for the securities. Finally, a U.S. broker-dealer is required to submit monthly statements disclosing recent price information with respect to the “penny stock” held in a customer’s account and information with respect to the limited market in “penny stocks.”

Shareholders should be aware that, according to the SEC, the market for “penny stocks” has suffered in recent years from patterns of fraud and abuse. Such patterns include (i) control of the market for the security by one or a few broker-dealers that are often related to the promoter or issuer; (ii) manipulation of prices through prearranged matching of purchases and sales and false and misleading press releases; (iii) “boiler room” practices involving high-pressure sales tactics and unrealistic price projections by inexperienced sales persons; (iv) excessive and undisclosed bid-ask differentials and markups by selling broker-dealers; and (v) the wholesale dumping of the same securities by promoters and broker-dealers after prices have been manipulated to a desired level, resulting in investor losses. Our management is aware of the abuses that have occurred historically in the penny stock market. Although we do not expect to be in a position to dictate the behavior of the market or of broker-dealers who participate in the market, management will strive within the confines of practical limitations to prevent the described patterns from being established with respect to our securities.

Future sales, or the possibility of future sales, of a substantial number of our common shares could adversely affect the price of our common shares.

Future sales of a substantial number of our common shares, or the perception that such sales will occur, could cause a decline in the market price of our common shares. As of March 7, 2023 we have warrants outstanding, which are exercisable for an aggregate of 99,171 common shares at a weighted average exercise price of \$57.60 per share, an equity commitment to sell up to \$10.0 million of additional common shares to Lincoln Park Capital Fund, LLC (“LPC”) pursuant to the commitment purchase agreement we entered into on December 5, 2022 with LPC (the “2022 LPC Purchase Agreement”), less an aggregate of \$379,725 of common shares that have been sold through March 7, 2023 under such agreement, and an at-the-market offering program pursuant to the sales agreement we entered into with A.G.P./Alliance Global Partners (“A.G.P.”) on November 30, 2018, as amended on April 5, 2019 (the “A.G.P. Sales Agreement”) for sales of up to \$12.9 million of additional common shares (subject to the volume limitations under Instruction I.B.5 of Form F-3). There will also be an aggregate of (i) an assumed 890,261 common shares being issued to FiveT IM upon the closing of this offering for partial repayment pursuant to the FiveT Loan Amendment, (ii) 2,577,600 common shares assumed issuable upon exercise of the FiveT Pre-Funded Warrant, at an exercise price of CHF 0.01 per common share, expected to be issued to FiveT IM upon the closing of this offering for repayment of the remainder of the FiveT Loan, (iii) 3,467,860 common shares assumed issuable upon exercise of the FiveT Common Warrants, which are identical to the Common Warrants sold to the public in this offering, expected to be issued to FiveT IM upon the closing of this offering and (iv) 5,714,286 common shares issuable upon exercise of the Common Warrants sold in this offering, in each case based on an assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, assuming no sale of Pre-Funded Warrants in this offering. We have also filed registration statements to register the resale of the common shares underlying the warrants that we have offered and sold in unregistered transactions, the common shares that are sold to LPC and the common shares and other equity securities that we have issued under our prior equity incentive plans or may issue under our new omnibus equity compensation plan. These common shares may be freely sold in the public market upon issuance, subject to certain limitations applicable to affiliates. In addition, we have filed a registration statement covering the issuance and sale by us of up to \$79 million of common shares, debt securities, warrants, purchase contracts, units and common shares, including shares sold and which may be sold under the A.G.P. Sales Agreement. We may issue such securities, including our common shares and warrants to purchase common shares, at any time and from time to time subject to the limitations set forth in General Instruction I.B.5 of Form F-3. If a large number of our common shares and/or warrants to purchase common shares are sold in the public market, the sales could reduce the trading price of our common shares and impede our ability to raise future capital.

We do not expect to pay dividends in the foreseeable future.

We have not paid any dividends since our incorporation. Even if future operations lead to significant levels of distributable profits, we currently intend that any earnings will be reinvested in our business and that dividends will not be paid until we have an established revenue stream to support continuing dividends. The proposal to pay future dividends to shareholders will in addition effectively be at the discretion of our board of directors after taking into account various factors including our business prospects, cash requirements, financial performance and new product development. In addition, payment of future dividends is subject to certain limitations pursuant to Bermuda law or by our Bye-laws. We are subject to Bermuda law restrictions on the payment of dividends including that no dividends may be declared by our board of directors or paid by the Company if there are reasonable grounds for believing that: (i) we are, or would after the payment be, unable to pay our liabilities as they become due; or (ii) that the realizable value of our assets would thereby be less than our liabilities. Accordingly, investors cannot rely on dividend income from our common shares and any returns on an investment in our common shares will likely depend entirely upon any future appreciation in the price of our common shares.

If we are or become classified as a passive foreign investment company (“PFIC”), our U.S. shareholders and holders of Common Warrants or Pre-Funded Warrants may suffer adverse tax consequences as a result.

A non-U.S. corporation, such as our Company, will be considered a PFIC for any taxable year if either (i) at least 75% of its gross income is passive income or (ii) at least 50% of the value of its assets (based on an average of the quarterly values of the assets during a taxable year) is attributable to assets that produce or are held for the production of passive income.

Based upon our current and projected income and assets, and projections as to the value of our assets, we do not anticipate that we will be a PFIC for the 2023 taxable year or the foreseeable future. However, no assurance can be given in this regard because the determination of whether we will be or become a PFIC is a factual determination made annually that will depend, in part, upon the composition of our income and assets, and we have not and will not obtain an opinion of counsel regarding our classification as a PFIC. Fluctuations in the market price of our common shares may cause us to be classified as a PFIC in any taxable year because the value of our assets for purposes of the asset test, including the value of our goodwill and unbooked intangibles, may be determined by reference to the market price of our common shares from time to time (which may be volatile). If our market capitalization subsequently declines, we may be or become classified as a PFIC for the 2023 taxable year or future taxable years. Furthermore, the composition of our income and assets may also be affected by how, and how quickly, we use our liquid assets and any future fundraising activity. Under circumstances where our revenues from activities that produce passive income significantly increases relative to our revenues from activities that produce non-passive income, or where we determine not to deploy significant amounts of cash for active purposes, our risk of becoming classified as a PFIC may substantially increase. It is also possible that the Internal Revenue Service (the “IRS”) may challenge the classification or valuation of our Company’s assets, including its goodwill and other unbooked intangibles, or the classification of certain amounts received by our Company, which may result in our Company being, or becoming classified as, a PFIC for the 2023 taxable year or future taxable years. Accordingly, there can be no assurance that we will not be a PFIC in the current or for any future taxable year and U.S. investors should invest in our common shares, Common Warrants or Pre-Funded Warrants only if they are willing to bear the U.S. federal income tax consequences associated with investments in PFICs.

If we were a PFIC for any taxable year during which a U.S. investor held our common shares, Common Warrants or Pre-Funded Warrants, certain adverse U.S. federal income tax consequences could apply to the U.S. Holder. See “Material U.S. Federal Income Tax Considerations for U.S. Holders.”

We are a holding company with no material direct operations.

We are a holding company with no material direct operations. As a result, we would be dependent on dividends, other payments or loans from our subsidiaries in order to pay a dividend. Our subsidiaries are subject to legal requirements of their respective jurisdictions of organization that may restrict their paying dividends or other payments, or making loans, to us, such as the potential for double taxation across jurisdictions.

We are a foreign private issuer and, as a result, we are not subject to U.S. proxy rules and are subject to Exchange Act reporting obligations that, to some extent, are more lenient and less frequent than those of a U.S. domestic public company.

We report under the Exchange Act, as a non-U.S. company with foreign private issuer status. Because we qualify as a foreign private issuer under the Exchange Act and although we are subject to Bermuda laws and regulations with regard to such matters and furnish semiannual financial information to the SEC, we are exempt from certain provisions of the Exchange Act that are applicable to U.S. domestic public companies, including (i) the sections of the Exchange Act regulating the solicitation of proxies, consents or authorizations in respect of a security registered under the Exchange Act; (ii) the sections of the Exchange Act requiring insiders to file public reports of their stock ownership and trading activities and liability for insiders who profit from trades made in a short period of time; and (iii) the rules under the Exchange Act requiring the filing with the SEC of quarterly reports on Form 10-Q containing unaudited financial and other specified information, or current reports on Form 8-K, upon the occurrence of specified significant events. In addition, foreign private issuers are not required to file their annual report on Form 20-F until four months after the end of each financial year, while U.S. domestic issuers that are accelerated filers are required to file their annual report on Form 10-K within 75 days after the end of each fiscal year. Foreign private issuers are also exempt from the Regulation Fair Disclosure, aimed at preventing issuers from making selective disclosures of material information. As a result of the above, you may not have the same protections afforded to shareholders of companies that are not foreign private issuers.

As a foreign private issuer and as permitted by the listing requirements of Nasdaq, we follow certain home country governance practices rather than the corporate governance requirements of Nasdaq.

We are a foreign private issuer. As a result, in accordance with Nasdaq Listing Rule 5615(a)(3), we comply with home country governance requirements and certain exemptions thereunder rather than complying with certain of the corporate governance requirements of Nasdaq.

Bermuda law does not require that a majority of our board of directors consists of independent directors. Our board of directors therefore may include fewer independent directors than would be required if we were subject to Nasdaq Listing Rule 5605(b)(1). In addition, we are not subject to Nasdaq Listing Rule 5605(b)(2), which requires that independent directors regularly have scheduled meetings at which only independent directors are present.

Bermuda law does not require that we disclose information regarding third-party compensation of our directors or director nominee. As a result, our practice varies from the third-party compensation disclosure requirements of Nasdaq Listing Rule 5250(b)(3). We follow the requirements of Bermuda law with respect to our compensation committee, disclosure of compensation of our directors and executive officers and information regarding third-party compensation of our directors or director nominee, each of which differ from the requirements of the Nasdaq Listing Rules.

In addition, as permitted by Bermuda law, we have opted not to implement a standalone nominating committee. To this extent, our practice varies from the independent director oversight of director nominations requirements of Nasdaq Listing Rule 5605(e).

The quorum for a general meeting of shareholders is as set out in our Bye-laws, which provides for a quorum of two or more persons present at the start of the meeting and representing in person or by proxy issued and outstanding voting shares in the company. Our practice thus varies from the requirement of Nasdaq Listing Rule 5620(c), which requires an issuer to provide in its bylaws for a generally applicable quorum, and that such quorum may not be less than one-third of the outstanding voting stock. We must provide shareholders with an agenda and other relevant documents for the general meeting of shareholders. However, Bermuda law has no regulatory regime for the solicitation of proxies, thus our practice varies from the requirement of Nasdaq Listing Rule 5620(b), which sets forth certain requirements regarding the solicitation of proxies. In addition, we have opted out of shareholder approval requirements for the issuance of securities in connection with certain events such as the acquisition of stock or assets of another company, the establishment of or amendments to equity-based compensation plans for employees, a change of control of us and certain private placements. To this extent, our practice varies from the requirements of Nasdaq Listing Rule 5635, which generally requires an issuer to obtain shareholder approval for the issuance of securities in connection with such events.

As a result of the above, you may not have the same protections afforded to shareholders of companies that are not foreign private issuers.

We may lose our foreign private issuer status, which would then require us to comply with the Exchange Act's domestic reporting regime and cause us to incur significant legal, accounting and other expenses.

We are a foreign private issuer and therefore we are not required to comply with all of the periodic disclosure and current reporting requirements of the Exchange Act applicable to U.S. domestic issuers. In order to maintain our current status as a foreign private issuer, either (a) a majority of our common shares must be either directly or indirectly owned of record by non-residents of the United States or (b)(i) a majority of our executive officers or directors may not be United States citizens or residents, (ii) more than 50 percent of our assets cannot be located in the United States and (iii) our business must be administered principally outside the United States. These criteria are tested on the last business day of our second fiscal quarter, each year. If we lost this status, we would be required to comply with the Exchange Act reporting and other requirements applicable to U.S. domestic issuers, which are more detailed and extensive than the requirements for foreign private issuers. We may also be required to make changes in our corporate governance practices in accordance with various SEC and stock exchange rules. The regulatory and compliance costs to us under U.S. securities laws if we are required to comply with the reporting requirements applicable to a U.S. domestic issuer may be significantly higher than the cost we would incur as a foreign private issuer. As a result, we expect that a loss of foreign private issuer status would increase our legal and financial compliance costs and would make some activities highly time-consuming and costly. We also expect that if we were required to comply with the rules and regulations applicable to U.S. domestic issuers, it would make it more difficult and expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These rules and regulations could also make it more difficult for us to attract and retain qualified members of our board of directors.

If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, shareholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common shares.

Effective internal controls over financial reporting are necessary for us to provide reliable financial reports and, together with adequate disclosure controls and procedures, are designed to prevent fraud. Any failure to implement required new or improved controls, or difficulties encountered in their implementation could cause us to fail to meet our reporting obligations. In addition, any testing by us conducted in connection with Section 404 of the Sarbanes-Oxley Act of 2002, or any subsequent testing by our independent registered public accounting firm, may reveal deficiencies in our internal controls over financial reporting that are deemed to be material weaknesses or that may require prospective or retroactive changes to our financial statements or identify other areas for further attention or improvement. Inferior internal controls could also subject us to regulatory scrutiny and sanctions, impair our ability to raise revenue and cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common shares.

We are required to disclose changes made in our internal controls and procedures, and our management is required to assess the effectiveness of these controls annually. However, for as long as we are a "non-accelerated filer" under Securities and Exchange Commission rules, our independent registered public accounting firm is not required to attest to the effectiveness of our internal controls over financial reporting pursuant to Section 404. An independent assessment of the effectiveness of our internal controls could detect problems that our management's assessment might not. Undetected material weaknesses in our internal controls could lead to financial statement restatements and require us to incur the expense of remediation.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, the price of our common shares and the Common Warrants and our trading volume could decline.

The trading market for our common shares and the Common Warrants will depend in part on the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. We cannot assure you that analysts will cover us or provide favorable coverage. If one or more of the analysts who cover us downgrade our common shares and the Common Warrants or publish inaccurate or unfavorable research about our business, the price of our common shares would likely decline. If one or more of these analysts cease coverage of the Company or fail to publish reports on us regularly, demand for our common shares could decrease, which might cause the price of our common shares and the Common Warrants and trading volume to decline.

As a Bermuda company, it may be difficult for you to enforce judgments against us or our directors and executive officers.

We are a Bermuda exempted company. As a result, the rights of holders of our common shares are governed by Bermuda law and our memorandum of continuance (the “Memorandum of Continuance”) and Bye-laws. The rights of shareholders under Bermuda law may differ from the rights of shareholders of companies incorporated in other jurisdictions. All of our executive officers and all but one of our directors referred to in this prospectus are not residents of the United States, and a substantial portion of our assets are located outside the United States. As a result, it may be difficult for investors to effect service of process on those persons in the United States or to enforce in the United States judgments obtained in U.S. courts against us or those persons based on the civil liability provisions of the U.S. securities laws. It is doubtful whether courts in Bermuda will enforce judgments obtained in other jurisdictions, including the United States, against us or our directors or officers under the securities laws of those jurisdictions or entertain actions in Bermuda against us or our directors or officers under the securities laws of other jurisdictions.

Bermuda law differs from the laws in effect in the United States and may afford less protection to holders of our common shares.

We are subject to the laws of Bermuda. As a result, our corporate affairs are governed by the Companies Act 1981 of Bermuda (the “Companies Act”), which differs in some material respects from laws typically applicable to U.S. corporations and shareholders, including the provisions relating to interested directors, amalgamations, mergers and acquisitions, takeovers, shareholder lawsuits and indemnification of directors. Generally, the duties of directors and officers of a Bermuda company are owed to the company only. Shareholders of Bermuda companies typically do not have rights to take action against directors or officers of the company and may only do so in limited circumstances. Class actions are not available under Bermuda law. The circumstances in which derivative actions may be available under Bermuda law are substantially more proscribed and less clear than they would be to shareholders of U.S. corporations. The Bermuda courts, however, would ordinarily be expected to permit a shareholder to commence an action in the name of a company to remedy a wrong to the company where the act complained of is alleged to be beyond the corporate power of the company or illegal, or would result in the violation of the company’s memorandum of association (or memorandum of continuance) or bye-laws. Furthermore, consideration would be given by a Bermuda court to acts that are alleged to constitute a fraud against the minority shareholders or, for instance, where an act requires the approval of a greater percentage of the company’s shareholders than that which actually approved it.

When the affairs of a company are being conducted in a manner that is oppressive or prejudicial to the interests of some shareholders, one or more shareholders may apply to the Supreme Court of Bermuda, which may make such order as it sees fit, including an order regulating the conduct of the company’s affairs in the future or ordering the purchase of the shares of any shareholders by other shareholders or by the company. Additionally, under our Bye-laws and as permitted by Bermuda law, each shareholder has waived any claim or right of action against our directors or officers for any action taken by directors or officers in the performance of their duties, except for actions involving fraud or dishonesty. In addition, the rights of holders of our common shares and the fiduciary responsibilities of our directors under Bermuda law are not as clearly established as under statutes or judicial precedent in existence in jurisdictions in the United States, particularly the State of Delaware. Therefore, holders of our common shares may have more difficulty protecting their interests than would shareholders of a corporation incorporated in a jurisdiction within the United States.

Our Bye-laws restrict shareholders from bringing legal action against our officers and directors.

Our Bye-laws contain a broad waiver by our shareholders of any claim or right of action, both individually and on our behalf, against any of our officers or directors. The waiver applies to any action taken by an officer or director, or the failure of an officer or director to take any action, in the performance of his or her duties, except with respect to any matter involving any fraud or dishonesty on the part of the officer or director. This waiver limits the right of shareholders to assert claims against our officers and directors unless the act or failure to act involves fraud or dishonesty.

We have anti-takeover provisions in our Bye-laws that may discourage a change of control.

Our Bye-laws contain provisions that could make it more difficult for a third party to acquire us without the consent of our board of directors. These provisions provide for:

- directors only to be removed for cause;
- restrictions on the time period in which directors may be nominated;
- our board of directors to determine the powers, preferences and rights of our preference shares and to issue the preference shares without shareholder approval; and
- an affirmative vote of 66 2/3% of our voting shares for certain “business combination” transactions which have not been approved by our board of directors.

These provisions could make it more difficult for a third party to acquire us, even if the third party’s offer may be considered beneficial by many shareholders. As a result, shareholders may be limited in their ability to obtain a premium for their shares.

Legislation enacted in Bermuda as to economic substance may affect our operations.

Pursuant to the Economic Substance Act 2018 (as amended) of Bermuda (the “ES Act”) that came into force on January 1, 2019, a registered entity other than an entity which is resident for tax purposes in certain jurisdictions outside Bermuda (“non-resident entity”) that carries on as a business any one or more of the “relevant activities” referred to in the ES Act must comply with economic substance requirements. The ES Act may require in-scope Bermuda entities which are engaged in such “relevant activities” to be directed and managed in Bermuda, have an adequate level of qualified employees in Bermuda, incur an adequate level of annual expenditure in Bermuda, maintain physical offices and premises in Bermuda or perform core income-generating activities in Bermuda. The list of “relevant activities” includes carrying on any one or more of the following activities: banking, insurance, fund management, financing, leasing, headquarters, shipping, distribution and service center, intellectual property and holding entities. We are carrying on relevant activities for the purposes of the ES Act and are required to comply with such economic substance requirements. Our compliance with the ES Act could affect the manner in which the Company operates its business or result in additional costs, which could adversely affect its business, financial condition and results of operations.

Risks Related to this Offering

We will have broad discretion as to how we use the proceeds, and we may use the proceeds in ways in which you and other shareholders may disagree.

We intend to use the net proceeds from the issuance of the common shares and Pre-Funded Warrants for the repayment of USD 1 million under the FiveT Loan and the remaining net proceeds for research and development, working capital and general corporate purposes. Our management will have broad discretion in the application of the proceeds from this offering and could spend the proceeds in ways that do not necessarily improve our operating results or enhance the value of our common shares. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common shares to decline and delay the development of our product candidates.

There is no public market for the Pre-Funded Warrants being offered in this offering.

There is no established public trading market for the Pre-Funded Warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the Pre-Funded Warrants on any securities exchange or nationally recognized trading system, including The Nasdaq Capital Market. Without an active market, the liquidity of the Pre-Funded Warrants will be limited.

There is no public market for the Common Warrants being sold in this offering.

There is no established public trading market for the Common Warrants being sold in this offering. Although we have applied to list the Common Warrants on Nasdaq, however there is no assurance that any market will develop.

The Common Warrants are speculative in nature.

The Common Warrants do not confer any rights of common share ownership on their holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire common shares at a fixed price. Commencing on the date of issuance, holders of the Common Warrants may exercise their right to acquire common shares and pay the stated exercise price per share.

There is no assurance that any of the Common Warrants will be exercised and we will receive the exercise proceeds therefrom.

The Common Warrants have an exercise price above the price of a common share and Common Warrant in this offering. If the price of our common shares does not exceed the Common Warrant exercise price, then it is unlikely that the Common Warrants will be exercised. The Common Warrants will expire on the fifth anniversary of their issuance, which if they expire without being exercised the company will not receive any proceeds therefrom.

Additionally for the Common Warrants to be exercised for cash, the company must keep an effective registration statement available for issuance of the common shares on exercise of the Common Warrants. If the company fails to maintain an effective registration statement, then the Common Warrants may be exercised on a cashless basis, and the company will not receive any cash amount from their exercise.

We will not receive any meaningful amount of additional funds upon the exercise of the Pre-Funded Warrants.

Each Pre-Funded Warrant will be exercisable until it is fully exercised and by means of payment of the nominal cash purchase price upon exercise. Accordingly, we will not receive any meaningful additional funds upon the exercise of the Pre-Funded Warrants.

The Common Warrants and FiveT Common Warrants will be accounted for as a liability, and the changes in value of such Common Warrants and FiveT Common Warrants may have a material effect on our financial results.

As disclosed under the heading “*Summary Consolidated Financial Information*,” above, we will be required to classify the Common Warrants and FiveT Common Warrants as a liability under the applicable accounting rules (IFRS). On issuance, the fair value of the Common Warrants and FiveT Common Warrants recognized as a derivative financial liability will be deducted from the net proceeds (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants), in order to determine the amount of Share Capital and Share Premium to recognize for the common shares. The fair value of the Common Warrants and FiveT Common Warrants at initial recognition is not yet known, and therefore it is unclear how much of the net proceeds of this offering (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants) will be allocated to liabilities rather than equity. The liability component of this offering could be material. Under the required accounting treatment for the derivative financial liability, we will be required to measure the fair value of the Common Warrants and FiveT Common Warrants at the end of each reporting period and recognize changes in the fair value since the last reporting date in our operating results for the current period. As a result of this recurring fair value measurement, our financial statements and results of operations may fluctuate in each period based on factors which are outside our control. Accordingly, we will recognize noncash gains or losses due to the half-year fair valuation of these warrants which could be material. The impact of changes in fair value on our earnings may have an adverse effect on the market price of our common shares and/or our shareholders’ equity, which may make it harder for us to, or prevent us from, meeting the continued listing standards of the Nasdaq Capital Market.

Holders of the Pre-Funded Warrants and Common Warrants purchased in this offering will have no rights as common shareholders until such holders exercise such warrants and acquire common shares.

Until holders of the Pre-Funded Warrants and Common Warrants acquire our common shares upon exercise thereof, holders of such Pre-Funded Warrants and Common Warrants will have no rights with respect to the common shares underlying such Pre-Funded Warrants and Common Warrants. Upon exercise of the Pre-Funded Warrants or Common Warrants, such holders will be entitled to exercise the rights of a common shareholder only as to matters for which the record date occurs after the exercise date.

Significant holders or beneficial holders of our common shares may not be permitted to exercise the Pre-Funded Warrants or Common Warrants that they hold.

A holder of the Pre-Funded Warrants or Common Warrants will not be entitled to exercise any portion of any Pre-Funded Warrant that, upon giving effect to such exercise, would cause: (i) the aggregate number of common shares beneficially owned by such holder (together with its affiliates) to exceed 4.99% (or, upon election of holder, 9.99%) of the number of common shares outstanding immediately after giving effect to the exercise; or (ii) the combined voting power of our securities beneficially owned by such holder (together with its affiliates) to exceed 4.99% (or, upon election of holder, 9.99%) of the combined voting power of all of our securities outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrants or Common Warrants. As a result, you may not be able to exercise your Pre-Funded Warrants or Common Warrants for common shares at a time when it would be financially beneficial for you to do so. In such a circumstance, you could seek to sell your Pre-Funded Warrants or Common Warrants to realize value, but you may be unable to do so in the absence of an established trading market and due to applicable transfer restrictions.

If you purchase common shares and/or Pre-Funded Warrants in this offering, you will suffer immediate dilution of your investment.

The public offering price of our common shares, Pre-Funded Warrants and accompanying Common Warrants is substantially higher than the as adjusted net tangible book value per common share. Therefore, if you purchase common shares and/or Pre-Funded Warrants and accompanying Common Warrants in this offering, you will pay a price per common share or Pre-Funded Warrant and accompanying Common Warrant that substantially exceeds our as adjusted net tangible book value per common share after this offering. To the extent outstanding options are exercised, you will incur further dilution. Based on the assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant (which was the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023), and assuming no sale of Pre-Funded Warrants in this offering, you will experience immediate dilution of \$0.61 per common share, representing the difference between our as adjusted net tangible book value per common share after giving effect to this offering and the public offering price. See “Dilution.”

In addition, to the extent that outstanding share options or warrants have been or may be exercised or other shares issued, you may experience further dilution.

PRESENTATION OF FINANCIAL AND OTHER INFORMATION

In this prospectus, we present certain historical consolidated financial information of Altamira Therapeutics, Ltd. The financial information herein is derived from our audited consolidated financial statements as of December 31, 2021 and 2020 and for the three years ended December 31, 2021, and from our unaudited condensed consolidated interim financial statements as of June 30, 2022 and for the six months ended June 30, 2022 and 2021. Please note that since issuing the audited consolidated financial statements, certain amounts as of and for the year ended December 31, 2021 have subsequently been revised; such revised amounts are derived from our unaudited condensed consolidated interim financial information included in this prospectus. In addition, all per share amounts and numbers of common shares in the prospectus (excluding the audited consolidated financial statements as of December 31, 2021 and 2022 and for the three years ended December 31, 2021 included as part of this prospectus) have been retrospectively adjusted to reflect the 2022 Reverse Share Split. Please see “*Summary Consolidated Financial Information*” and “*Management’s Discussion and Analysis of Financial Condition and Results of Operations*” for further details. Our historical consolidated financial information has been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”) in Swiss Francs. None of the consolidated financial statements were prepared in accordance with generally accepted accounting principles in the United States.

The terms “dollar,” “USD” or “\$” refer to U.S. dollars, the term, “Swiss Francs” or “CHF” refers to the legal currency of Switzerland and the terms “€” or “euro” are to the currency introduced at the start of the third stage of European economic and monetary union pursuant to the treaty establishing the European Community, as amended. Unless otherwise indicated, all references to currency amounts in this prospectus are in CHF. For our unaudited condensed consolidated interim financial statements and related notes as of and for the six months ended June 30, 2022 and management’s discussion and analysis thereon, and for our audited condensed consolidated interim financial statements and related notes as of and for the year ended December 31, 2021 and management’s discussion and analysis thereon, U.S. dollar amounts have been translated into Swiss Francs at a rate of CHF 0.9550 to USD 1.00 and CHF 0.9146 to USD 1.00, the official exchange rates quoted as of June 30, 2022 and December 31, 2021, respectively, by the U.S. Federal Reserve Bank.

We have made rounding adjustments to some of the figures included in this prospectus. Accordingly, numerical figures shown as totals in some tables may not be an arithmetic aggregation of the figures that preceded them.

MARKET AND INDUSTRY DATA

This prospectus contains industry, market and competitive position data that are based on industry publications and studies conducted by third parties as well as our own internal estimates and research. These industry publications and third party studies generally state that the information that they contain has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains statements that constitute forward-looking statements, including statements concerning our industry, our operations, our anticipated financial performance and financial condition, and our business plans and growth strategy and product development efforts. These statements constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Exchange Act. The words “may,” “might,” “will,” “should,” “could” “would” “estimate,” “project,” “plan,” “anticipate,” “expect,” “intend,” “outlook,” “believe” and other similar expressions are intended to identify forward-looking statements. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates. These forward-looking statements are based on estimates and assumptions by our management that, although we believe to be reasonable, are inherently uncertain and subject to a number of risks and uncertainties.

Forward-looking statements appear in a number of places in this prospectus and include, but are not limited to, statements regarding our intent, belief or current expectations. Forward-looking statements are based on our management’s beliefs and assumptions and on information currently available to our management. Such statements are subject to risks and uncertainties, and actual results may differ materially from those expressed or implied in the forward-looking statements due to various factors, including, but not limited to:

- our operation as a development-stage company with limited operating history and a history of operating losses;
 - our ability to timely and successfully reposition our Company around RNA therapeutics and to divest or partner our business in neurology, rhinology and allergology.
- the COVID-19 outbreak, which continues to evolve, and which could significantly disrupt our preclinical studies and clinical trials, and therefore our receipt of necessary regulatory approvals;
- our need for substantial additional funding to continue the development of our product candidates before we can expect to become profitable from sales of our products and the possibility that we may be unable to raise additional capital when needed, particularly in light of the global outbreak of the novel coronavirus, which continues to evolve;
- the timing, scope, terms and conditions of a potential divestiture or partnering of the Company’s traditional business as well as the cash such transaction(s) may generate;
- the market acceptance and resulting sales from Bentrio[®] in international markets;
- our dependence on the success of AM-125, AM-401 and AM-411, which are still in preclinical or clinical development, may eventually prove to be unsuccessful;
- the chance that we may become exposed to costly and damaging liability claims resulting from the testing of our product candidates in the clinic or in the commercial stage;
- the chance our clinical trials may not be completed on schedule, or at all, as a result of factors such as delayed enrollment or the identification of adverse effects, particularly in light of the global outbreak of the novel coronavirus, which continues to evolve;
- uncertainty surrounding whether any of our product candidates will receive regulatory approval, which is necessary before they can be commercialized;
- if our product candidates obtain regulatory approval, our product candidates being subject to expensive, ongoing obligations and continued regulatory oversight;
- enacted and future legislation may increase the difficulty and cost for us to obtain marketing approval and commercialization;

- dependence on governmental authorities and health insurers establishing adequate reimbursement levels and pricing policies;
- our products may not gain market acceptance, in which case we may not be able to generate product revenues;
- our reliance on our current strategic relationships with Washington University or Nuance Pharma and the potential success or failure of strategic relationships, joint ventures or mergers and acquisitions transactions;
- our reliance on third parties to conduct our nonclinical and clinical trials and on third-party, single-source suppliers to supply or produce our product candidates;
- our ability to obtain, maintain and protect our intellectual property rights and operate our business without infringing or otherwise violating the intellectual property rights of others;
- our ability to meet the continuing listing requirements of Nasdaq and remain listed on The Nasdaq Capital Market;
- the chance that certain intangible assets related to our product candidates will be impaired; and
- other risk factors discussed under “Risk Factors” beginning on page 8.

Our actual results or performance could differ materially from those expressed in, or implied by, any forward-looking statements relating to those matters. Accordingly, no assurances can be given that any of the events anticipated by the forward-looking statements will transpire or occur, or if any of them do so, what impact they will have on our results of operations, cash flows or financial condition. Except as required by law, we are under no obligation, and expressly disclaim any obligation, to update, alter or otherwise revise any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

We estimate that the net proceeds to us from the offering will be \$7.0 million (or \$8.1 million if the representative of the underwriters exercise in full the over-allotment option), based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023 as set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, assuming no sale of Pre-Funded Warrants in this offering and excluding the proceeds, if any, from the exercise of the Common Warrants issued in this offering. Each \$0.50 increase (decrease) in the assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on the Nasdaq Capital Market as set forth on the cover page of this prospectus, would increase (decrease) our net proceeds by \$2.7 million, assuming that the number of securities offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting estimated underwriting discounts and commissions. Similarly, each 100,000 increase (decrease) in the number of common shares offered by us in this offering would increase (decrease) our net proceeds by \$0.1 million (assuming no sale of Pre-Funded Warrants in this offering), assuming a public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023, and after deducting estimated underwriting discounts and commissions.

The public offering price per common share and/or Pre-Funded Warrant and accompanying Common Warrant will be determined between us, the underwriter and investors based on market conditions at the time of pricing and may be at a discount to the current market price of our common shares.

We intend to use the net proceeds from the issuance of the common shares for the repayment of USD 1 million under the FiveT Loan and the remaining net proceeds for research and development, working capital and general corporate purposes. Such purposes may also include capital expenditures.

Our management will have broad discretion in the application of the net proceeds of this offering, and investors will be relying on our judgment regarding the application of the net proceeds. In addition, we might decide to postpone or not pursue certain preclinical activities or clinical trials if the net proceeds from this offering and our other sources of cash are less than expected.

Pending their use, we plan to invest the net proceeds of this offering in short-and intermediate-term interest-bearing investments.

DIVIDEND POLICY

We have never paid a dividend, and we do not anticipate paying dividends in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business. As a result, investors in our common shares will benefit in the foreseeable future only if our common shares appreciate in value.

Any future determination to declare and pay dividends to holders of our common shares will be made at the discretion of our board of directors, which may take into account several factors, including general economic conditions, our financial condition and results of operations, available cash and current and anticipated cash needs, capital requirements, contractual, legal, tax and regulatory restrictions, the implications of the payment of dividends by us to our shareholders and any other factors that our board of directors may deem relevant. In addition, pursuant to the Companies Act, a company may not declare or pay dividends if there are reasonable grounds for believing that (1) the company is, or would after the payment be, unable to pay its liabilities as they become due or (2) that the realizable value of its assets would thereby be less than its liabilities. Under our bye-laws (the "Bye-laws"), each of our common shares is entitled to dividends if, as and when dividends are declared by our board of directors, subject to any preferred dividend right of the holders of any preferred shares.

We are a holding company with no material direct operations. As a result, we would be dependent on dividends, other payments or loans from our subsidiaries in order to pay a dividend. Our subsidiaries are subject to legal requirements of their respective jurisdictions of organization that may restrict their paying dividends or other payments, or making loans, to us.

MARKET FOR OUR COMMON SHARES

Our common shares began trading on the Nasdaq Global Market on August 11, 2014 under the symbol “EARS”. On September 28, 2017, we transferred our common shares from the Nasdaq Global Market to the Nasdaq Capital Market under the same symbol (“EARS”). On March 14, 2018, our post-Merger common shares began trading on the Nasdaq Capital Market. Following approval of our shareholders at a Special General Meeting of Shareholders held on July 21, 2021 we changed our name from Auris Medical Holding Ltd. to Altamira Therapeutics Ltd., and our shares started trading under the new name and the new ticker symbol “CYTO” on the Nasdaq Capital Market on July 26, 2021.

We have applied to list the Common Warrants on the Nasdaq Capital Market under the symbol “CYTOW.” No assurance can be given that our application will be approved or that a trading market for the Common Warrants will develop. The Common Warrants being sold in the offering will be issued in electronic book-entry form to the investors and the warrant agent is American Stock Transfer & Trust Company, LLC.

CAPITALIZATION

The table below sets forth our cash and cash equivalents and our total capitalization (defined as total debt and shareholders' equity) as of June 30, 2022:

- on an actual basis;
- on a pro forma basis to give effect to (i) the issuance and sale of an aggregate of 1,234,777 common shares for net proceeds of \$5.2 million under the A.G.P. Sales Agreement subsequent to June 30, 2022 and through March 7, 2023, (ii) the issuance and sale of an aggregate of 300,000 common shares for net proceeds of \$1.6 million under the 2022 LPC Purchase Agreement and 2020 LPC Purchase Agreement subsequent to June 30, 2022 and through March 7, 2023, (iii) the borrowing of an aggregate of CHF 600,000 principal amount under the September 2022 Loan Agreement, (iv) the borrowing of an aggregate of CHF 350,000 principal amount under the December 2022 Loan Agreements and (v) pursuant to the FiveT Loan Amendment, the payment of USD 1,000,000, the issuance of an assumed 890,261 common shares and the issuance of an assumed 2,577,600 common shares assuming the full exercise of the FiveT Pre-Funded Warrant, at an exercise price of CHF 0.01 per common share, expected to be issued to FiveT IM upon the closing of this offering for repayment of the FiveT Loan, and its accrued interest through March 28, 2023, together with the issuance of the FiveT Common Warrants to purchase 3,467,860 common shares, based on an assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, assuming no sale of Pre-Funded Warrants in this offering; and
- on a pro forma as adjusted basis to give effect to our issuance and sale of 5,714,286 common shares and accompanying Common Warrants to purchase an aggregate of 5,714,286 common shares in this offering (assuming no sale of Pre-Funded Warrants), at the assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023, after deducting underwriting discounts and commissions and estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of the Common Warrants issued in this offering.

Investors should read this table in conjunction with our unaudited condensed consolidated interim financial statements and related notes as of and for the six months ended June 30, 2022 and management's discussion and analysis thereon, as well as "Use of Proceeds" in this prospectus.

U.S. dollar amounts have been translated into Swiss Francs at a rate of CHF 0.9550 to USD 1.00, the official exchange rate quoted as of June 30, 2022 by the U.S. Federal Reserve Bank. Such Swiss Franc amounts are not necessarily indicative of the amounts of Swiss Francs that could actually have been purchased upon exchange of U.S. dollars on June 30, 2022 and have been provided solely for the convenience of the reader. On March 17, 2023, the exchange rate as reported by the U.S. Federal Reserve Bank was CHF 0.9284 to USD 1.00.

The exercise price for the Common Warrants and FiveT Common Warrants is denominated in USD, which results in a variable amount of cash when converted into the company’s functional currency, CHF. As such, the Common Warrants and FiveT Common Warrants are classified as a derivative financial liability under International Financial Accounting Standards (IFRS). Upon issuance and sale of the common shares and accompanying Common Warrants and issuance of the FiveT Common Warrants, the Company will be required to give accounting recognition to such instruments by determining the value of the Common Warrants and FiveT Common Warrants to be recognized as a derivative financial liability at that point and deducting such amount from the net proceeds (or, in the case of the FiveT Common Warrants, from the increase in Share Capital and Share Premium resulting from the expected conversion of the FiveT Loan into common shares, the FiveT Pre-Funded Warrant and the FiveT Common Warrants) to determine the amount of Share Capital and Share Premium to recognize for the common shares. As such, a portion of the proceeds (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants) will be recognized as a liability for the Common Warrants and FiveT Common Warrants, and a portion will be recognized as equity (split between Share Capital and Share Premium for the nominal value and remaining excess over nominal value, respectively). Thereafter, the derivative financial liability for the Common Warrants and FiveT Common Warrants will continue to be recognized at fair value through profit and loss until exercised. For purposes of the table below, because the amount to be attributed to the Common Warrants and FiveT Common Warrants has not yet been determined, the full amount of net proceeds (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants) in excess of the nominal value of common shares (shown within Share capital – Common shares) has been included in the amount attributed to Share Premium, rather than bifurcating the net proceeds between liabilities and equity as will be required upon issuance. Please also refer to the risk factor “The Common Warrants and FiveT Common Warrants will be accounted for as a liability, and the changes in value of such Common Warrants and FiveT Common Warrants may have a material effect on our financial results.”

	June 30, 2022		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands of CHF except share and per share data)		
Cash and cash equivalents	373	6,862	13,514
Loans(1)	4,702	950	950
Lease liabilities	519	519	519
Common warrants(2)			
Shareholders’ equity:			
Share capital			
Common shares, par value CHF 0.20 per share; 853,213 common shares issued and outstanding on an actual basis, 5,855,847 common shares issued and outstanding on a pro forma basis and 11,570,133 common shares issued and outstanding on a pro forma as adjusted basis	171	1,172	2,315
Share premium(2)	190,109	200,213	205,722
Foreign currency translation reserve	(2)	(2)	(2)
Accumulated deficit	(182,603)	(183,271)	(183,271)
Total shareholders’ equity attributable to owners of the company	7,675	18,112	24,764
Total capitalization	12,896	19,581	26,233

- (1) The loans under the “actual” column represent the FiveT Loan and the loans under the “pro forma” and the “pro forma as adjusted” columns represent the September 2022 Loan Agreement and the December 2022 Loan Agreements, giving effect to the extinguishment, through partial repayment and conversion of the remainder, of the FiveT Loan upon the closing of the offering under the FiveT Loan Amendment.
- (2) See explanation above the table.

The above discussion and table assume the sale of all 5,714,286 common shares and accompanying Common Warrants and no sale of Pre-Funded Warrants in this offering and are based on 853,213 common shares outstanding as of June 30, 2022 and excludes:

- 94,337 of our common shares issuable upon the exercise of options outstanding as of June 30, 2022 at a weighted average exercise price of \$28.82 per common share;
- 10,319 common shares issuable upon the exercise of warrants outstanding as of June 30, 2022 at a weighted average exercise price of \$503.55 per common share; and
- 3,467,860 common shares assumed issuable upon exercise of the FiveT Common Warrants, which are identical to the Common Warrants sold to the public in this offering, expected to be issued to FiveT IM upon the closing of this offering, based on an assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023.

DILUTION

If you invest in our securities, your interest will be diluted to the extent of the difference between the public offering price you pay in this offering and our pro forma as adjusted net tangible book value per common share immediately after this offering.

As of June 30, 2022, we had a net tangible book value (deficit) of \$(8.6) million, corresponding to a net tangible book value (deficit) of \$(10.03) per common share. Net tangible book value per share represents the amount of our total assets less our total liabilities, excluding intangible assets, divided by 853,213, the total number of our common shares outstanding as of June 30, 2022.

Our pro forma net tangible book value as of June 30, 2022 was \$2.2 million, or \$0.37 per common share. Pro forma net tangible book value gives effect to (i) the issuance and sale of an aggregate of 1,234,777 common shares for net proceeds of \$5.2 million under the A.G.P. Sales Agreement subsequent to June 30, 2022 and through March 7, 2023, (ii) the issuance and sale of an aggregate of 300,000 common shares for net proceeds of \$1.6 million under the 2022 LPC Purchase Agreement and 2020 LPC Purchase Agreement subsequent to June 30, 2022 and through March 7, 2023, (iii) the borrowing of an aggregate of CHF 600,000 principal amount under the September 2022 Loan Agreement, (iv) the borrowing of an aggregate of CHF 350,000 principal amount under the December 2022 Loan Agreements and (v) pursuant to the FiveT Loan Amendment, the payment of USD 1,000,000, the issuance of an assumed 890,261 common shares and the issuance of an assumed 2,577,600 common shares assuming the full exercise of the FiveT Pre-Funded Warrant, at an exercise price of CHF 0.01 per common share, expected to be issued to FiveT IM upon the closing of this offering for repayment of the FiveT Loan, and its accrued interest through March 28, 2023, together with the issuance of the FiveT Common Warrants to purchase 3,467,860 common shares, based on an assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, assuming no sale of Pre-Funded Warrants in this offering.

After giving effect to the sale by us of 5,714,286 common shares and accompanying Common Warrants to purchase an aggregate of 5,714,286 common shares at the assumed offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023, assuming no sale of Pre-Funded Warrants, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of the Common Warrants issued in this offering, our pro forma as adjusted net tangible book value estimated at June 30, 2022 would have been approximately \$9.1 million, representing \$0.79 per common share. This represents an immediate increase in pro forma net tangible book value of \$0.42 per common share to existing shareholders and an immediate dilution in net tangible book value of \$0.61 per common share to new investors purchasing common shares in this offering, assuming no sale of Pre-Funded Warrants. Dilution for this purpose represents the difference between the price per common share and accompanying Common Warrant paid by these purchasers and net tangible book value per common share immediately after the completion of the offering.

The exercise price for the Common Warrants and FiveT Common Warrants is denominated in USD, which results in a variable amount of cash when converted into the company's functional currency, CHF. As such, the Common Warrants and FiveT Common Warrants are classified as a derivative financial liability under International Financial Accounting Standards (IFRS). Upon issuance and sale of the common shares and accompanying Common Warrants and issuance of the FiveT Common Warrants, the Company will be required to give accounting recognition to such instruments by determining the value of the Common Warrants and FiveT Common Warrants to be recognized as a derivative financial liability at that point and deducting such amount from the net proceeds (or, in the case of the FiveT Common Warrants, from the increase in Share Capital and Share Premium resulting from the expected conversion of the FiveT Loan into common shares, the FiveT Pre-Funded Warrant and the FiveT Common Warrants) to determine the amount of Share Capital and Share Premium to recognize for the common shares. As such, a portion of the proceeds (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants) will be recognized as a liability for the Common Warrants and FiveT Common Warrants, and a portion will be recognized as equity (split between Share Capital and Share Premium for the nominal value and remaining excess over nominal value, respectively). Thereafter, the derivative financial liability for the Common Warrants and FiveT Common Warrants will continue to be recognized at fair value through profit and loss until exercised. In calculating the pro forma and pro forma as adjusted net tangible book value estimated at June 30, 2022, because the amount to be attributed to the Common Warrants and FiveT Common Warrants has not yet been determined, the full amount of net proceeds (or increase in Share Capital and Share Premium, in the case of the FiveT Common Warrants) in excess of the nominal value of common shares has been included in the amount attributed to Share Premium, rather than bifurcating the net proceeds between liabilities and equity as will be required upon issuance. Please also refer to the risk factor "The Common Warrants and FiveT Common Warrants will be accounted for as a liability, and the changes in value of such Common Warrants and FiveT Common Warrants may have a material effect on our financial results."

The following table illustrates this dilution to new investors purchasing common shares in the offering.

Assumed combined public offering price per common share and accompanying Common Warrant	\$ 1.40
Historical net tangible book value (deficit) per common share at June 30, 2022	\$ (10.03)
Increase in historical net tangible book value per common share attributable to pro forma events	\$ 10.40
Pro forma net tangible book value (deficit) per common share at June 30, 2022	\$ 0.37
Increase in pro forma net tangible book value per common share attributable to new investors	\$ 0.42
Pro forma as adjusted net tangible book value per common share after the offering	\$ 0.79
Dilution per common share to new investors	\$ 0.61
Percentage of dilution in net tangible book value per common share for new investors	44%

Each \$0.50 increase (decrease) in the assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023, would increase (decrease) the pro forma as adjusted net tangible book value after this offering by \$0.32 (\$0.31) per common share and the dilution per common share to new investors in the offering by \$0.18 (\$0.19) per common share (assuming no sale of Pre-Funded Warrants in this offering), after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, excluding the proceeds, if any, from the exercise of the Common Warrants issued in this offering, and assuming that the number of common shares offered by us, as set forth on the cover page of this prospectus, remains the same.

We may also increase or decrease the number of common shares we are offering. A 100,000 increase (decrease) in the number of common shares offered by us would increase (decrease) our pro forma as adjusted net tangible book value per common share after this offering by \$0.004 (\$0.004) and decrease (increase) the dilution per common share to new investors by \$0.004 (\$0.004), after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of the Common Warrants issued in this offering.

If the underwriters were to fully exercise their option to purchase up to 857,142 additional common shares from us, the pro forma as adjusted net tangible book value per common shares after the offering would be \$0.82 per common share, and the dilution per common share to new investors would be \$0.58 per share, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us and excluding the proceeds, if any, from the exercise of the Common Warrants issued in this offering.

The above discussion and table are based on 853,213 common shares, actual, and 5,855,847 common shares, pro forma, outstanding as of June 30, 2022, which number excludes:

- 94,337 of our common shares issuable upon the exercise of options outstanding as of June 30, 2022 at a weighted average exercise price of \$28.82 per common share;
- 10,319 common shares issuable upon the exercise of warrants outstanding as of June 30, 2022 at a weighted average exercise price of \$503.55 per common share; and
- 3,467,860 common shares assumed issuable upon exercise of the FiveT Common Warrants, which are identical to the Common Warrants sold to the public in this offering, expected to be issued to FiveT IM upon the closing of this offering, based on an assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023.

To the extent that outstanding options are exercised, you may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities may result in further dilution to our shareholders.

Swiss Franc amounts have been translated into U.S. dollars at a rate of CHF 0.9550 to USD 1.00, the official exchange rate quoted as of June 30, 2022 by the U.S. Federal Reserve Bank. Such U.S. dollar amounts are not necessarily indicative of the amounts of U.S. dollars that could actually have been purchased upon exchange of Swiss Francs on June 30, 2022 and have been provided solely for the convenience of the reader.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations and our consolidated financial statements, including the notes thereto, included in this prospectus. The financial information in this section is derived from our audited consolidated financial statements as of December 31, 2021 and 2020 and for the three years ended December 31, 2021 appearing at the end of the prospectus, except for (1) the 2022 reverse share split and (2) certain amounts as of and for the year ended December 31, 2021 that were subsequently revised in the unaudited condensed consolidated interim financial information for the six months ended June 30, 2022; and the unaudited condensed consolidated interim financial statements as of June 30, 2022 and 2021 and for the six months ended June 30, 2022 and 2021 also appearing at the end of this prospectus. Please see below under "Reconciliation for Previously Reported Amounts" for additional details.

The following discussion is based on our financial information prepared in accordance with IFRS (unless otherwise indicated), which might differ in material respects from generally accepted accounting principles in other jurisdictions. The following discussion includes forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including but not limited to those described under "Risk factors" and elsewhere in this prospectus.

Overview

We are a clinical-and commercial-stage biopharmaceutical company developing therapeutics that address important unmet medical needs. We are currently active in two areas: the development of RNA therapeutics for extrahepatic therapeutic targets (OligoPhore™ / SemaPhore™ platforms; AM-401 for the treatment of KRAS driven cancer, AM-411 for the treatment of rheumatoid arthritis; preclinical), and nasal sprays for protection against airborne allergens, and where approved, viruses (Bentrio®; commercial) or the treatment of vertigo (AM-125; Phase 2). Historically, we also pursued the development of therapeutics for intratympanic treatment of tinnitus or hearing loss (Keyzilen® and Sonsuvi®, Phase 3). We have previously announced our intention to reposition the Company around RNA therapeutics while exploring strategic options to either divest our traditional businesses or partner them with one or several other companies.

Recent Developments

Development and commercial launch of Bentrio® nasal spray

In June 2021, we announced the market launch of Bentrio®, our drug-free nasal spray for protection against airborne viruses and allergens, in Germany, and our intention to expand market coverage progressively through additional distribution channels and in further countries. Bentrio® is marketed as an "over-the-counter" medical device. Bentrio® is based on a gel emulsion which works by forming a protective layer on the nasal mucosa that acts as a physical barrier. In its natural state, Bentrio® is viscous; for application via spray it must be briefly shaken, rendering it liquid. Upon contacting the nasal mucosa, the formulation reverts to its normal viscous state, which supports an extended nasal residence time. Development of the product had been initiated under code name AM-301 in summer 2020. For the project, we set up a new subsidiary, Altamira Medica Ltd. ("Altamira Medica"), based in Zug, Switzerland.

On March 4, 2022, we announced that we had entered into an exclusive licensing and distribution agreement for Bentrio® with Nuance Pharma Ltd. ("Nuance") in Chinese Mainland, Hong Kong, Macau and South Korea (the "Territory"). Under the terms of the agreement, we will initially supply Bentrio® to Nuance. Nuance made an upfront payment of USD 1 million and may pay to Altamira development and commercial milestones of up to USD three million and up to USD 19.5 million, respectively. In a second stage, Nuance will assume local production of the product for the Territory upon certain milestones. Once Nuance assumes local production of Bentrio®, it will pay to us a staggered royalty on net sales in the Territory at a high-single to low-double-digit percentage.

On May 20, 2022, we announced the results from a clinical trial with Bentrio® in house dust mite (HDM) allergic rhinitis. The trial enrolled a total of 37 patients with a history of perennial allergic rhinitis ("PAR") caused by HDM exposure. Study participants were randomized under an open label, three-period crossover design to receive either Bentrio® in a single or double dose, or no treatment, prior to controlled allergen exposure in an environmental exposure chamber for three hours. Bentrio® treatment reduced the increase in mean total nasal symptoms score (TNSS) by 1.1 points (-1.87 to -0.28 in the 95% confidence interval; $p < 0.01$) vs. no treatment. There was no meaningful difference in outcome between a single or double puff per nostril. Bentrio® treatment was well tolerated.

In December 2022, we completed enrollment into a randomized controlled clinical trial with Bentrio[®] in seasonal allergic rhinitis (SAR; “NASAR” trial) in Australia. NASAR enrolled 100 SAR patients that were randomized at a 1:1 ratio to either receive Bentrio[®] or saline spray via self-administration three times per day, or as needed, for two weeks. Saline nasal sprays are currently the most frequently used type of drug-free treatment for SAR. The primary endpoint will be the comparison of the reflective Total Nasal Symptom Score (rTNSS) under treatment with Bentrio[®] against saline spray. In January 2023, we announced the results of an interim analysis based on data from the first 53 participants in the NASAR trial. The interim analysis showed a decrease of the rTNSS in the Bentrio[®] group from 6.7 points in the pre-treatment period to 5.1 points over the 14-day treatment period, while the saline spray group showed a decrease from 7.6 to 7.1 points. The difference of 1.55 points in favor of Bentrio was statistically significant in the ANCOVA model (LSmeans; $p = 0.015$; 95% confidence interval -2.78 to -0.32). The interim analysis further showed good tolerability both for Bentrio[®] and the comparator. Top-line data for this trial are expected during Q2 2023.

In January 2023 we announced top-line data from the COVAMID trial in acute COVID-19. The trial enrolled a total of 160 subjects who were randomized within 3 days from symptom onset at a 2:1:1 ratio to receive for 10 days either Bentrio[®], modified Bentrio[®] (lacking one mineral component), or no treatment, followed by a 10-day observation phase. The primary efficacy endpoint was the change in PCR cycle threshold (CT). COVAMID was conducted in Bulgaria and North Macedonia.

The trial showed a mean increase in the CT value from baseline to Day 11 of 15.3 for the Bentrio[®] group, 14.1 for the modified Bentrio[®] group and 13.7 for the untreated control group. An increase in the CT by 1 indicates a decrease in the nasal viral load of 50%. In the mixed model for repeated measures (MMRM) the difference in the mean change of CT of the Bentrio[®] group vs. the untreated and the modified Bentrio[®] groups to Day 11 failed to reach statistical significance (LSmeans 0.8 and 0.64; $p = 0.319$ and 0.427 ; 95% CI -0.78 to 2.38 and -0.95 to 2.23, respectively). More Bentrio[®] and modified-Bentrio[®] treated patients achieved full resolution of COVID-19 signs and symptoms by Day 11 than untreated patients (93.7 and 92.5 vs. 85.0%) and more of them were uninfected or asymptomatic at that time point (59.5 and 65.0 vs. 45.0%). The treatment was well tolerated. The incidence of adverse events in the Bentrio[®] group was 2.4% (mild cases only), 9.5% in the modified-Bentrio[®] group, and 14.0% in the untreated group (including two cases of unwitnessed sudden death after Day 11).

On June 24, 2022, we received 510(k) clearance from the U.S. Food and Drug Administration (FDA) to market Bentrio[®] (“Bentrio[®] Allergy Blocker”) for the treatment of allergic rhinitis (hay fever) in the US. Clearance was obtained for the following indication for use:

- Bentrio[®] is intended to treat hay fever and allergy sufferers by promoting alleviation of mild allergic symptoms (i.e. mild nasal irritation including itchy, runny, or congested nasal passages) triggered by the inhalation of various airborne allergens including indoor and outdoor environmental pollens, house dust, animal hair and dust mites.
- Application of Bentrio[®] produces a mucous-like gel barrier that coats the nasal membranes, traps inhaled allergens within the nasal cavity and helps with their clearance.

We intend to market and distribute Bentrio[®] Allergy Blocker in the US, and going forward also in Europe, through well-established OTC consumer health companies. As part of our strategy to focus on RNA delivery, we have been in discussions with several potential partners. Following due diligence by interested parties, we anticipate entering into a partnering transaction in the first quarter of 2023. In the context of those partnering discussions, we suspended preparations for launching the product in the U.S. on our own and paused major marketing initiatives in Europe.

AM-125 Phase 2 trial in acute vertigo (“TRIVERS”)

On June 13, 2022 we announced top-line data from our Phase 2 TRIVERS trial with AM-125 (intranasal betahistine) in acute vertigo (acute vestibular syndrome, AVS). The randomized, double-blind, placebo-controlled TRIVERS trial enrolled at more than ten study sites across Europe a total of 124 patients who suffered from acute vertigo following surgery for the removal of a tumor. Patients were randomized to receive either AM-125 at up to 20 mg or a placebo three times daily for four weeks, which was followed by a two-week treatment-free observation period. In addition, all trial participants followed a standardized course of vestibular rehabilitation therapy. Improvement in the “Tandem Romberg” test, which measures how long patients are able to maintain balance with their two feet aligned one after the other while they have their eyes closed, served as the primary efficacy outcome. For reference, the trial also included 16 patients who received ‘open label’ oral betahistine at 16 mg three times daily (the approved dose in most countries worldwide).

The TRAVERS trial demonstrated good tolerability of AM-125. Further, administration of AM-125 resulted in a dose- and time-dependent improvement in balance and signs and symptoms of vestibular dysfunction. At treatment period end, patients treated with AM-125 20 mg on average managed to maintain balance for 12.5 seconds vs. 7.5 seconds for placebo treated patients, which is a statistically significant improvement ($p=0.0242$; least square means in repeated-measure ANCOVA model, per protocol population).

This was corroborated by higher frequency of complete spontaneous nystagmus resolution (34.5 vs. 20.0% of patients). Based on the outcomes, we are planning to file an investigational new drug application with the U.S. Food and Drug Administration (FDA) in the first quarter of 2023.

Acquisition of Trasir Therapeutics and strategic repositioning around RNA therapeutics

On June 1, 2021, we acquired 100% of the share capital of privately held Trasir Therapeutics Inc. (“Trasir”) through the merger of our subsidiary Auris Medical Inc. with and into Trasir (the “Merger”), with Trasir surviving the merger as the surviving entity. Trasir was subsequently renamed Altamira Therapeutics, Inc. and redomiciled in Dover, Delaware. Founded in 2014, Trasir has been a pioneer in the development of nanoparticles for extrahepatic oligonucleotide delivery.

The transaction has been the starting point for a strategic repositioning under which the Company intends to focus on the development of RNA therapeutics while in the medium term aiming to partner or divest our non-RNA assets, which are our assets in neurology, rhinology and allergology, including Bentrio[®], AM-125, Keyzilen[®], Sonsuvi[®] and certain early-stage drug product candidates. Dr. Samuel Wickline, Trasir’s founder and Professor of Medicine, served as Chief Scientific Officer from June 2021 through December 2022 and continues to serve the Company on a part-time consulting basis as Chief Scientific Adviser, effective January 1, 2023. In addition, to reflect the Company’s strategic repositioning, the shareholders convened for a Special General Meeting on July 21, 2021 to approve the change of its corporate name to Altamira Therapeutics Ltd. and elected Margrit Schwarz, PhD, MBA, as an additional Board member. Further, on July 26, 2021, the Company’s common shares started trading under the ticker symbol “CYTO” instead of “EARS”. Trasir’s core technology is the proprietary peptide polyplex platform OligoPhore[™] and its equivalent SemaPhore[™] that can engage any type of short interfering RNA (siRNA) or messenger RNA (mRNA), respectively, in rapid self-assembly. The technology is designed to allow for systemic or local delivery of RNA payloads with efficient cellular uptake and full endosomal release. Importantly, it enables delivery to target tissues outside the liver, creating the potential for developing RNA-based therapies for a range of indications with substantial unmet need.

In various murine models of disease, OligoPhore[™] and SemaPhore[™] have been shown to protect the RNA payload (siRNA and/or mRNA) from degradation in the circulation, while enabling pH-dependent nucleotide endosomal escape and cytoplasmic delivery. Proof-of-concept for efficient delivery and target knockdown has been demonstrated for targets in the NF- κ B family, various members of the ETS transcription factor family, and targets in the JNK and TAM pathways, enabling a preclinical development pathway for several oncology indications, rare diseases, as well as rheumatoid and osteoarthritis and inflammatory pathologies such as atherosclerosis.

In July 2021, we announced the selection of mutant KRAS-driven colorectal cancer as the first therapeutic indication for our OligoPhore[™] oligonucleotide delivery platform and the launch of a development program under product development code AM-401. In July 2022, we announced the initiation of a second development program, AM-411, which is intended for the treatment of rheumatoid arthritis.

On October 25, 2022, we effected a reverse share split (the “2022 Reverse Share Split”) of our common shares at a ratio of one-for-twenty. When the reverse share split became effective, every 20 of our pre-split issued and outstanding common shares, par value 0.01 per share, were consolidated into one common share, par value CHF 0.20 per share. Effecting the 2022 Reverse Share Split reduced the number of our issued and outstanding common shares from 21,494,261 common shares to 1,074,713 common shares. It also simultaneously adjusted outstanding options issued under our equity incentive plan and outstanding warrants to purchase common shares. All per share amounts and numbers of common shares in this management’s discussion and analysis reflect the 2022 Reverse Share Split.

Collaboration and License Agreements

On December 11, 2020, Trasir entered into an Exclusive License Agreement with Washington University located in St. Louis, Missouri (“WU”), which Exclusive License Agreement was subsequently amended and restated in June 2021 (as so amended and restated, the “Agreement”), with effect as of December 11, 2020. Pursuant to the Agreement, WU granted Trasir an exclusive, worldwide, royalty-bearing license (with the right to sublicense) during the term of the Agreement under certain patent rights owned or controlled by WU to research, develop, make, have made, sell, offer for sale, use and import pharmaceutical products covered under such patent rights for all fields of use. Such licensed products may include “silencing RNA” (siRNAs) pharmaceutical preparations formulated in combination with Trasir’s proprietary delivery technologies. In consideration for such worldwide, exclusive license, the Company (through its acquisition of Trasir, described above) will be obligated to pay WU: annual license maintenance fees in the low five figures through first commercial sale; pre-clinical and clinical regulatory milestones; sales milestones; and a low single digit royalty based on annual net sales of licensed products worldwide for at least the applicable patent term or period of marketing exclusivity, whichever is longer, but in no case less than a minimum royalty term of 12 years; and a percentage share (in the double digits) of sublicensing revenues received by the Company in connection with licensed products. Such regulatory and sales milestones may total up to an aggregate of USD 4,375,000. In the event the Company fails to meet certain regulatory diligence milestones, WU will have the right to terminate the license. The Agreement also contains customary representations, warranties and covenants by both parties, as well as customary provisions relating to indemnification, confidentiality and other matters.

Research and Development Expense

Our research and development expense is highly dependent on the development phases of our research projects and therefore may fluctuate substantially from period to period. Our research and development expense for the periods covered by the financial statements included in this prospectus mainly relates to the following key programs:

- *Bentrio® (AM-301) for protection against airborne viruses and allergens.* Since the initiation of the development program in September 2020, we have conducted a variety of in vitro and in vivo studies as well as clinical investigations to determine the tolerability, safety and efficacy of Bentrio® and to meet various regulatory requirements for marketing the nasal spray as a medical device in various countries and regions. While these assessments for obtaining market clearance and related expenditures were essentially completed in the third quarter of 2022, we have various other studies either ongoing or planned to further expand the body of evidence for current or additional uses of the product.
- *AM-401 for the treatment of mutant KRAS-driven colorectal cancer.* Since the acquisition of Trasir, we have initiated additional pharmacology studies and the development and scale-up of the peptide carrier and siRNA payloads as well as analytical development. Expenditure levels are expected to increase further as we plan to conduct various IND-enabling studies, including toxicology in non-human primates, and move into larger-scale production of the peptide, siRNA payloads and nanoparticles.
- *AM-411 for the treatment of rheumatoid arthritis.* We initiated in July 2022 a second development program based on our OligoPhore™ delivery platform, using siRNA targeting NF-kB (p65) for the treatment of rheumatoid arthritis. The program will benefit from substantial synergies with program AM-401.
- *AM-125 for the treatment of acute vestibular syndrome.* We evaluated intranasal betahistine for the treatment of acute vestibular syndrome in the Phase 2 TRAVERS clinical trial. In June 2022 we reported positive results from the TRAVERS trial, which showed a time- and dose-dependent improvement in balance and signs and symptoms of vestibular dysfunction. In parallel, we have been conducting several IND-enabling preclinical studies which we completed in 2021 and 2022. We intend to file an IND with the FDA in the first quarter of 2023 and subsequently to initiate a Phase 3 clinical program.
- *AM-201 for Antipsychotic-Induced Weight Gain.* We evaluated intranasal betahistine in a Phase 1b clinical trial in the prevention of antipsychotic-induced weight gain and somnolence. The study was initiated in March 2019 at a single site in Europe and completed in 2020. While the trial showed a dose dependent reduction in antipsychotic-induced weight gain, in the context of our strategic repositioning, we have decided to deprioritize project AM-201 and suspended all development work.

Other research and development expenses mainly relate to our pre-clinical studies of AM-102 (second generation tinnitus treatment). The expenses mainly consist of costs for synthesis of the pre-clinical compounds and costs paid to academic and other research institutions in conjunction with pre-clinical testing.

Results of Operations

The numbers below have been derived from our unaudited condensed consolidated interim financial statements as of and for the six months ended June 30, 2022 and 2021. The discussion below should be read along with this financial information, and it is qualified in its entirety by reference to them.

Comparison of the six months ended June 30, 2022 and 2021:

	Six months ended June 30,		Change %
	2022	2021	
	(in thousands of CHF)		
Revenue	1,223	-	n/a
Cost of sales	(1,192)	-	n/a
Gross profit	31	-	n/a
Other operating income	256	-	n/a
Research and development	(3,564)	(3,394)	5%
Sales and marketing	(2,130)	-	n/a
General and administrative	(2,076)	(3,062)	(32)%
Operating loss	(7,483)	(6,456)	16%
Interest expense	(377)	(172)	119%
Foreign currency exchange gain (loss), net	58	292	(80)%
Revaluation (loss)/gain from derivative financial instruments	451	(429)	(205)%
Transaction costs	(1)	-	n/a
Loss before tax	(7,352)	(6,765)	9%
Income tax gain	46	10	360%
Net loss attributable to owners of the Company	(7,306)	(6,755)	8%
Other comprehensive income:			
Items that will never be reclassified to profit or loss			
Remeasurements of defined benefit liability	210	449	(53)%
Items that are or may be reclassified to profit and loss			
Foreign currency translation differences	(64)	(42)	52%
Other comprehensive loss	146	407	(64)%
Total comprehensive loss attributable to owners of the company	(7,160)	(6,348)	13%

Revenue

In addition to CHF 0.3 million of product sales of Bentrío[®], the revenue for the first half-year of 2022 includes a payment of CHF 0.9 million related to the exclusive licensing and distribution agreement concluded with Nuance for Bentrío[®] in Chinese Mainland, Hong Kong, Macau and South Korea.

Cost of Sales

	Six months ended		Change
	June 30,		
	2022	2021	
	(in thousands of CHF)		%
Product purchases, packaging and logistics	(348)	-	n/a
Employee benefits and expenses	(79)	-	n/a
Inventory write-down	(765)	-	n/a
Total	(1,192)	-	n/a

As of June 30, 2022, the Company's inventory consisted of the product Bentrio[®], a drug-free nasal spray for protection against airborne viruses and allergens. Bentrio[®] has a limited shelf life, which may affect the salability of the product, and is packaged in various configurations (stock keeping units, "SKUs") for different markets and in different languages to address specific requirements under national rules and regulations or by trade channels. Based on a management review of the inventory as at June 30, 2022 for any obsolete or slow-moving items, the Company wrote down finished good inventories in the amount of CHF 0.8 million. The amount of the write down was expensed to the income statement under Cost of Sales.

Research and development expense

	Six months ended		Change
	June 30,		
	2022	2021	
	(in thousands of CHF)		%
Clinical projects	(1,375)	(1,181)	16%
Pre-clinical projects	(274)	(231)	19%
Drug manufacturing and substance	(348)	(765)	(55)%
Employee benefits	(1,324)	(743)	78%
Other research and development expenses	(243)	(474)	(49)%
Total	(3,564)	(3,394)	5%

Research and development expenses amounted to CHF 3.6 million in the six months ended June 30, 2022. This represents an increase of CHF 0.2 million compared to the six months ended June 30, 2021. Research and development expenses reflected the following:

- *Capitalization of internal costs for AM-125.* In the six months ended June 30, 2022, we capitalized direct costs related to our AM-125 program for a total amount of CHF 1.5 million compared to CHF 1.7 million for the six months ended June 30, 2021.
- *Clinical projects.* In the six months ended June 30, 2022 clinical expenses were higher than in the six months ended June 30, 2021 by CHF 0.2 million due to higher trial activity levels.
- *Pre-clinical projects.* In the six months ended June 30, 2022, pre-clinical expenses were essentially unchanged compared to the six months ended June 30, 2021.
- *Drug manufacture and substance.* In the six months ended June 30, 2022, drug manufacture and substance related costs decreased by CHF 0.4 million compared to the six months ended June 30, 2021 due to lower levels of project work related to our AM-301 program.
- *Employee benefits.* Employee expenses increased by CHF 0.6 million in the six months ended June 30, 2022 compared to the same period in 2021 due to a higher headcount and recruiting costs.
- *Other research and development expenses.* Other research and development expenses decreased by CHF 0.2 million in the six months ended June 30, 2022 compared to the same period in 2021 as we incurred lower expenditures for intellectual property and regulatory consulting services to our AM-301 program.

Sales and marketing expense

	Six months ended June 30,		Change %
	2022	2021	
	(in thousands of CHF)		
Marketing and sales expenses	(2,028)	-	n/a
Employee benefits and expenses	(102)	-	n/a
Total	(2,130)	-	n/a

Marketing and sales expenses are related to the commercial launch of Bentrio[®] in selected European countries.

General and administrative expense

	Six months ended June 30,		Change %
	2022	2021	
	(in thousands of CHF)		
Employee benefits	(405)	(1,362)	(70)%
Lease expenses	(7)	(26)	(73)%
Business development	(7)	(521)	(99)%
Travel and representation	(33)	(45)	(27)%
Administration costs	(1,565)	(1,108)	41%
Depreciation Right-of-use assets	(59)	-	n/a
Total	(2,076)	(3,062)	(32)%

General and administrative expense decreased to CHF 2.1 million in the six months ended June 30, 2022 compared to CHF 3.1 million in the same period in the previous year, primarily due to lower employee benefits as there were lower shared-based bonus payments, which was partly offset by an increase in general administration costs.

Interest expense

Interest expense in the six months ended June 30, 2022 amounted to CHF 376,848 (June 30, 2021: CHF 172,462) included CHF 357,930 related to the FiveT Loan, as well as interest related to lease liabilities and bank charges.

Foreign currency exchange gain / (loss), net

For the six months ended June 30, 2022, fluctuations in foreign currency exchange rates resulted in a gain of CHF 0.06 million, compared to a gain of CHF 0.3 million during the same period in the previous year.

Revaluation gain / (loss) from derivative financial instruments

For the six months ended June 30, 2022, CHF 449,614 of the revaluation gain from derivative financial instruments is related to the revaluation of the financial derivatives embedded in the FiveT Loan. In the six months ended June 30, 2021, there was a revaluation loss from derivative financial instruments of CHF 428,742.

On January 30, 2018 we issued 1,875 warrants in connection with a direct offering of 3,125 common shares, each warrant entitling its holder to purchase one common share at an exercise price of USD 2,000.00 per common share. As of March 13, 2018, following the consummation of the Merger, the warrants became exercisable for an aggregate of 1,875 of our common shares (assuming we decide to round up fractional common shares to the next whole common share), at an exercise price of USD 2,000.00 per common share. As of June 30, 2022, the fair value of the warrants amounted to CHF 0. The revaluation gain of the derivative for the six months ended June 30, 2022 amounted to CHF 1,233, compared to a revaluation loss of CHF 12,740 in the same period in 2021.

On May 15, 2019, we issued 86,064 pre-funded warrants and 108,064 warrants in connection with the May 2019 Registered Offering of 22,000 common shares, with each pre-funded warrant entitling its holder to purchase one common share at an exercise price of CHF 0.20 and each warrant entitling its holder to purchase one common share at an exercise price of CHF 86.80. All warrants were exercised between December 2020 and March 2021.

Comparison of the years ended December 31, 2021 and 2020

	Year Ended December 31,		
	2021	2020	Change
	(in thousands of CHF)		%
Revenue	64	-	n/a
Cost of goods sold	(2,241)	-	n/a
Gross profit	(2,177)	-	n/a
Other income	214	174	23%
Research and development	(8,361)	(2,863)	192%
Sales and marketing	(1,498)	-	n/a
General and administrative	(4,947)	(2,594)	91%
Operating loss	(16,768)	(5,283)	217%
Interest income	3	0	100%
Interest expense	(190)	(135)	41%
Foreign currency exchange gain / (loss), net	329	(333)	(199)%
Revaluation gain / (loss) from derivative financial instruments	(411)	(2,250)	(82)%
Transaction costs	-	(220)	(100)%
Loss before tax	(17,037)	(8,221)	107%
Income tax gain/(loss)	(21)	21	(205)%
Net loss attributable to owners of the Company	(17,058)	(8,200)	108%
Other comprehensive loss:			
Items that will never be reclassified to profit or loss			
Re-measurements of defined benefits liability, net of taxes of CHF 0	264	(26)	(1,119)%
Items that are or may be reclassified to profit or loss			
Foreign currency translation differences, net of taxes of CHF 0	1	89	(99)%
Other comprehensive loss	265	63	322%
Total comprehensive loss attributable to owners of the Company	(16,793)	(8,137)	106%

Revenue and cost of goods sold

In 2021, we recorded our first revenues of CHF 0.1 million as we launched Bentrío[®] starting in the summer through online pharmacies in Germany and Austria and, based upon additional stability data which allowed to extend the product's shelf life to a suitable range, from December also through stationary pharmacies in Germany. Cost of goods sold of CHF 2.2 million comprised the relevant manufacturing costs for Bentrío[®] incurred through our contract manufacturer, expenses for storage and shipments, including set-up costs for our third-party central warehouse in Europe, as well as inventory write-offs. The latter concerned products in inventory at December 31, 2021 with only short remaining shelf life and / or in labelling and packaging configurations (stock keeping units, "SKUs") for certain European countries where approval of certain marketing materials and messages was still pending.

Other income

Other income increased 23% from TCHF 174 in 2020 to TCHF 214 in 2021 as we booked for the first-time research and development tax credits related to clinical projects.

Research and development expense

	Year Ended December 31,		
	2021	2020	Change
	(in thousands of CHF)		%
Research and development expense			
Clinical projects	(2,380)	(477)	399%
Pre-clinical projects	(587)	(243)	142%
Product and process development	(1,100)	(615)	79%
Employee benefits	(1,897)	(1,121)	69%
Other research and development expenses	(2,397)	(407)	489%
Total	(8,361)	(2,863)	192%

Research and development expense increased by 192% from CHF 2.9 million in 2020 to CHF 8.4 million in 2021. Our research and development expense is dependent on the development phases of our research projects and may therefore fluctuate significantly from year to year. The variances in expense between 2020 and 2021 are mainly due to the following factors:

- *Capitalization of internal costs for AM-125.* In the year ended December 31, 2021, we capitalized direct costs related to our AM-125 program for a total amount of CHF 2.8 million, compared to CHF 2.3 million in the year ended December 31, 2020.
- *Clinical projects.* In the year ended December 31, 2021, we incurred higher service and milestone costs due to our clinical development with AM-301, reflecting the completion of a clinical investigation in allergic rhinitis (pollen, single dose), the preparation of a study in COVID-19 patients as well as the initiation of studies in seasonal allergic rhinitis (pollen, repeated dosing) and perennial allergic rhinitis (house dust mite, repeated dosing). In 2020, expenses for clinical projects were related to the completion of a clinical trial with AM-201 in antipsychotic-induced weight gain and preparations for the allergic rhinitis study with AM-301.
- *Pre-clinical projects.* In the year ended December 31, 2021, pre-clinical expenses increased by 142% principally due to the conduct of in vitro and in vivo studies with AM-301.
- *Product and process development.* In the year ended December 31, 2021, expenses increased by 79% mainly due to the scale-up and validation of the manufacturing process for AM-301 as well as analytical development for AM-301. In 2021 they also included for the first-time expenses related to the development of AM-401.
- *Employee benefits.* Employee benefit costs rose in 2021 due to higher headcount and increases in recruiting fees and share-based bonus payments.
- *Other research and development expenses.* Other research and development expenses increased by CHF 2.0 million in the year ended December 31, 2021 compared to the year ended December 31, 2020 primarily due to impairment costs related to our AM-101, AM-111 and AM-201 programs of CHF 1.5 million related to our strategic decision to reposition the Company around RNA therapeutics. In addition, we incurred higher expenses for patents and regulatory affairs as we filed intellectual property around AM-301 and compiled the technical dossier for the declaration of conformity for AM-301 in the EU and submitted a 510(k) application for premarket clearance for AM-301 to the FDA.

Sales and marketing expense

	Year Ended December 31,		
	2021	2020	Change
	(in thousands of CHF)		%
Sales and marketing expense			
Marketing and sales expenses	(1,133)	-	-%
Employee benefits and expenses	(204)	-	-%
Product samples	(161)	-	-%
Total	(1,498)	-	-%

In 2021, we incurred sales and marketing expenses of CHF 1.5 million, which were primarily related to costs for the creation and production of advertisement and other marketing materials, online campaigns, employee benefits, consulting and product samplings.

General and administrative expense

	Year Ended December 31,		
	2021	2020	Change
	(in thousands of CHF)		%
General and administrative expense			
Employee benefits	(1,555)	(811)	92%
Business development	(967)	(96)	907%
Travel expenses	(76)	(29)	162%
Administration expenses	(2,246)	(1,646)	36%
Lease expenses	(52)	(14)	271%
Depreciation tangible assets	(30)	(4)	650%
Capital tax expenses	(21)	6	300%
Total	(4,947)	(2,594)	91%

General and administrative expenses increased by 91% from CHF 2.6 million in 2020 to CHF 4.9 million in the year ended December 31, 2021. The increase was primarily related to higher headcount and share-based bonus payments, business development activities related to Bentrion[®] and higher consulting expenses.

Interest income

Interest income increased in the year ended December 31, 2021 compared to year the ended December 31, 2020 due to higher balances on interest-bearing short-term deposits.

Interest expense

Interest expense in the year ended December 31, 2021 as well as in December 31, 2020 included mainly the interest accrued on the convertible loan provided by FiveT Capital.

Foreign currency exchange gain/(loss), net

In 2021, we recorded a foreign currency exchange gain of CHF 0.3 million compared to a loss of CHF 0.3 million in 2020 as the Swiss Franc depreciated against some of the major currencies.

Revaluation gain/(loss) from derivative financial instruments

Expenses related to fair value measurement of derivatives embedded in the FiveT convertible loan of CHF 416,003 were recorded as financial expenses in profit or loss for the financial year 2021 compared to CHF 2.3 million in 2020.

On February 21, 2017, we issued 10,000,000 (pre-merger) warrants, each warrant entitling its holder to purchase 0.70 of a common share at an exercise price of \$1.20. Additionally, the underwriter was granted a 30-day option to purchase up to 1,500,000 (pre-merger) additional common shares and/or 1,500,000 (pre-merger) additional warrants. On February 15, 2017, the underwriter partially exercised its option for 1,350,000 (pre-merger) warrants. Revaluation gain/(loss) shows the changes in fair value of the warrants issued in connection with this offering. As of December 31, 2021, the outstanding warrants issued in the February 2017 offering were exercisable for up to 39,725 common shares at an exercise price of \$240.00 per common share. As of December 31, 2021, the fair value of the warrants amounted to CHF 0. The revaluation loss of the derivative for the twelve months ended December 31, 2021 amounted to CHF 0 (2020: CHF 0). Since its initial recognition as of February 21, 2017, the fair value decreased by CHF 5,091,817 resulting in a gain in the corresponding amount (fair value as of February 21, 2017: CHF 5,091,817).

On January 30, 2018, we issued warrants in connection with a direct offering of 62,499 common shares, each warrant entitling its holder to purchase 0.6 common share at an exercise price of \$100.00 per common share. As of December 31, 2020, the warrants were exercisable for an aggregate of 37,501 of our common shares (assuming we decide to round up fractional common shares to the next whole common share). Revaluation gain/(loss) shows the changes in fair value of the warrants issued in connection with this offering. As of December 31, 2021, the fair value of the warrants amounted to CHF 1,233. The revaluation gain of the derivative for the twelve months ended December 31, 2021 amounted to CHF 5,085, compared to 2020 where there was a revaluation loss of CHF 1,965. Since its initial recognition on January 30, 2018, the fair value of the warrants decreased by CHF 2,482,514 resulting in a gain in the corresponding amount (fair value as of January 30, 2018: CHF 2,483,747).

On July 17, 2018, the Company issued Series A warrants each entitling its holder to purchase 0.35 of a common share for an aggregate of 314,102 common shares, and Series B warrants entitling its holder to purchase 0.25 of a common share for an aggregate of 224,358 common shares in connection with the July 2018 Registered Offering of 897,435 common shares. The original exercise price was CHF 7.80 per common share. Revaluation gain/(loss) shows the changes in fair value of the outstanding Series B warrants issued in connection with this offering.

On June 18, 2020, the remaining 34,535 outstanding Series B warrants expired without further warrants being exercised. As a result, no further revaluation gain or loss was recognized for the year ended December 31, 2020 (fair value as of July 17, 2018: CHF 137,987).

Income tax gain/(loss)

Income tax gain/(loss) reflects the assessment of deferred tax assets and liabilities.

Remeasurements of defined benefits liability

Remeasurements of the net defined benefits liability, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), increased 1,119% from a negative adjustment in the amount of CHF 26,000 in 2020 to a positive adjustment of CHF 0.3 million in 2021. The gain in 2021 is primarily due to a change in demographic and financial assumptions, and a higher return on plan assets.

Foreign currency translation differences

Foreign currency translation differences decreased by 99% from CHF 0.1 million in 2020 to a negligible amount in 2021. The decrease was primarily related to changes in the opening and closing balance of the group's currency translation differences.

Comparison of the years ended December 31, 2020 and 2019

	Year ended December 31,		
	2020	2019	Change
	(in thousands of CHF)		%
Other operating income	174	-	100%
Research and development	(2,863)	(3,325)	(14)%
General and administrative	(2,594)	(3,934)	(34)%
Operating loss	(5,283)	(7,259)	(27)%
Interest income	0	18	(100)%
Interest expense	(135)	(29)	366%
Foreign currency exchange loss, net	(333)	(219)	52%
Revaluation gain / (loss) from derivative financial instruments	(2,250)	664	(439)%
Transaction Costs	(220)	-	(100)%
Loss before tax	(8,221)	(6,825)	20%
Income tax gain/(loss)	21	194	(89)%
Net loss attributable to owners of the Company	(8,200)	(6,631)	24%
Other comprehensive loss:			
Items that will never be reclassified to profit or loss			
Re-measurements of defined benefits liability, net of taxes of CHF 0	(26)	(72)	(64)%
Items that are or may be reclassified to profit or loss			
Foreign currency translation differences, net of taxes of CHF 0	89	16	456%
Other comprehensive loss	63	(56)	(213)%
Total comprehensive loss attributable to owners of the Company	(8,137)	(6,687)	22%

Research and development expense

	Year ended December 31,		
	2020	2019	Change
	(in thousands of CHF)		%
Research and development expense			
Clinical projects	(477)	(993)	(52)%
Pre-clinical projects	(243)	(182)	34%
Drug manufacture and substance	(615)	(481)	28%
Employee benefits	(1,121)	(1,374)	(18)%
Other research and development expenses	(407)	(295)	38%
Total	(2,863)	(3,325)	(14)%

Research and development expense decreased by 14% from CHF 3.3 million in 2019 to CHF 2.9 million in 2020. Our research and development expense is dependent on the development phases of our research projects and may therefore fluctuate significantly from year to year. The variances in expense between 2019 and 2020 are mainly due to the following factors:

- Capitalization of internal costs for AM-125. In the year ended December 31, 2020, we capitalized direct costs related to our AM-125 program for a total amount of CHF 2.3 million, compared to CHF 3.2 million in the year ended December 31, 2019.
- Clinical projects. In the year ended December 31, 2020, we incurred lower service and milestone costs for our studies with intranasal betahistine, mainly reflecting the completion of Phase 1b trial with AM-201.
- Pre-clinical projects. In the year ended December 31, 2020, pre-clinical expenses increased by 33% principally due to the initiation of our AM-301 project activities.
- Drug manufacture and substance. In the year ended December 31, 2020, drug manufacture and substance expenses increased by 28% mainly due to AM-301 project activities.

- Employee benefits. Employee benefit costs decreased in 2020 due to lower headcount and lower recruiting fees. In addition, we received reimbursements under the Swiss short-time work scheme, which was used for three months in connection with a temporary reduction in project activities due to the COVID-19 pandemic.
- Other research and development expenses. Other research and development expenses increased by CHF 0.1 million in the year ended December 31, 2020 compared to the year ended December 31, 2019 primarily due to AM-301 regulatory costs.

General and administrative expense

	Year ended December 31,		
	2020	2019	Change
	(in thousands of CHF)		%
General and administrative expense			
Employee benefits	(811)	(1,011)	(20)%
Business development	(96)	(114)	(16)%
Travel expenses	(29)	(103)	(72)%
Administration expenses	(1,646)	(2,653)	(38)%
Lease expenses	(14)	(27)	(48)%
Depreciation tangible assets	(4)	(11)	(64)%
Capital tax expenses	6	(15)	(133)%
Total	(2,594)	(3,934)	(34)%

General and administrative expenses decreased by 34% from CHF 3.9 million in 2019 to CHF 2.6 million in the year ended December 31, 2020. The decrease is related to lower employee benefits due to lower headcount and reimbursements under the Swiss short-time work scheme, which was used for three months in connection with a temporary reduction in company activities due to the COVID-19 pandemic. Administration costs decreased mainly due to lower consultancy costs (redomestication in the previous period) and lower headcount.

Interest income

Interest income decreased in the year ended December 31, 2020 compared to year the ended December 31, 2019 due to no interest earned in the year ended December 31, 2020 on short-term deposits.

Interest expense

Interest expense in 2020 includes interest related to the convertible loan agreement with FiveT Capital. This compares to CHF 0.03 million in the year ended December 31, 2019 which was related to the Hercules loan.

Foreign currency exchange gain/(loss), net

Foreign currency exchange loss increased in 2020 mainly due to the depreciation of the USD and EUR against the Swiss Franc.

Revaluation gain/(loss) from derivative financial instruments

Expenses related to fair value measurement of derivatives embedded in the FiveT convertible loan of CHF 2,250,222 were recorded as financial expenses in profit or loss for the financial year 2020.

On January 31, 2019, we made the final payment to Hercules under the facility, comprising the last amortization payment as well as an end of term charge. With the final payment, all covenants and collaterals in favor of Hercules have been lifted. In addition, Hercules agreed to return the warrant held by Hercules exercisable for 783 common shares at an exercise price of \$788 per common share for no consideration to us in exchange for our payment to Hercules.

On February 21, 2017, we issued 10,000,000 (pre-merger) warrants, each warrant entitling its holder to purchase 0.70 of a common share at an exercise price of \$1.20. Additionally, the underwriter was granted a 30-day option to purchase up to 1,500,000 (pre-merger) additional common shares and/or 1,500,000 (pre-merger) additional warrants. On February 15, 2017, the underwriter partially exercised its option for 1,350,000 (pre-merger) warrants. Revaluation gain/(loss) show the changes in fair value of the warrant issued in connection with this offering. As of December 31, 2020, the outstanding warrants issued in the February 2017 offering were exercisable for up to 39,725 common shares at an exercise price of \$240.00 per common share. As of December 31, 2020, the fair value of the warrants amounted to CHF 0. The revaluation loss of the derivative for the twelve months ended December 31, 2020 amounted to CHF 0, compared to 2019 where there was a revaluation gain of CHF 166,301. Since its initial recognition as of February 21, 2017, the fair value decreased by CHF 5,091,817, resulting in a gain in the corresponding amount (fair value as of February 21, 2017: CHF 5,091,817).

On January 30, 2018, we issued warrants in connection with a direct offering of 62,499 common shares, each warrant entitling its holder to purchase 0.6 common share at an exercise price of \$100.00 per common share. As of December 31, 2020, the warrants became exercisable for an aggregate of 37,501 of our common shares (assuming we decide to round up fractional common shares to the next whole common share), at an exercise price of \$100.00 per common share. Revaluation gain/(loss) show the changes in fair value of the warrant issued in connection with this offering. As of December 31, 2020, the fair value of the warrants amounted to CHF 6,318. The revaluation loss of the derivative for the twelve months ended December 31, 2020 amounted to CHF 1,965, compared to 2019 where there was a revaluation gain of CHF 285,298. Since its initial recognition on January 30, 2018, the fair value of the warrants has decreased by CHF 2,477,429 resulting in a gain in the corresponding amount (fair value as of January 30, 2018: CHF 2,483,747).

On July 17, 2018, the Company issued Series A warrants each entitling its holder to purchase 0.35 of a common share for an aggregate of 314,102 common shares, and Series B warrants entitling its holder to purchase 0.25 of a common share for an aggregate of 224,358 common shares in connection with the July 2018 Registered Offering of 897,435 common shares. The original exercise price was CHF 7.80 per common share. Revaluation gain/(loss) shows the changes in fair value of the outstanding Series B warrants issued in connection with this offering.

As of December 31, 2019, 145,226 Series A warrants were exercised for an aggregate amount of CHF 1,132,762 and 143,221 Series B warrants were exercised for an aggregate amount of CHF 1,117,125.

As of December 31, 2019, 143,221 Series B exercised warrants were subject to revaluation at the time that they were exercised and the fair value amounts to CHF 3,005,348 (2018: CHF 3,005,348). Since its initial recognition on July 17, 2018 the fair value of the warrants has increased by CHF 2,433,099, resulting in a loss in the corresponding amounts (fair value as of July 17, 2018: CHF 572,249).

As of December 31, 2019, the number of Series B warrants outstanding subject to revaluation were 34,535 and the fair value amounted to CHF 0.00. On June 18, 2020, the outstanding warrants expired without further warrants being exercised. As a result, no further revaluation gain or loss was recognized for the year ended December 31, 2020 (fair value as of July 17, 2018: CHF 137,987).

Income tax expense

Income tax expense reflects the assessment of deferred tax assets and liabilities.

Remeasurements of defined benefits liability

Remeasurements of the net defined benefits liability, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), decreased 64% from 2019 to 2020. The loss in 2020 is primarily due to an actuarial loss arising from experience adjustment.

Foreign currency translation differences

Foreign currency translation differences increased by 456% from 2019 to 2020. The increase was primarily related to changes in the opening and closing balance of the group's currency translation differences.

Reconciliation for Previously Reported Amounts

In connection with the preparation of our unaudited condensed consolidated interim financial statements for the six months ended June 30, 2022, we identified an immaterial error with regard to advance payments for research and development costs and related tax credits for the annual period ended December 31, 2021. We evaluated the error and determined that the related impact was not material to our financial statements for any prior periods, but that correction of the impact of the error would be significant to our results of operations for the six months ended June 30, 2022. Accordingly, we have revised previously reported financial information for such immaterial error. As such, the revised amounts are derived from our unaudited condensed consolidated interim financial statements for the six months ended June 30, 2022. Please refer to the below reconciliation for the previously reported amounts as of and for the year ended December 31, 2021 (as reported in the audited financial statements) to the revised amounts as of and for the year ended December 31, 2021 (as reported in the unaudited condensed consolidated interim financial statements). Additional information related to the revision of the December 31, 2021 amounts is included in Note 8 of the unaudited condensed interim financial statements for the six months ended June 30, 2022.

Revised Consolidated Balance Sheet

	As of December 31, 2021		
	As Reported	Adjustment	As Revised
	(in CHF)		
Other receivables	917,833	(246,493)	671,340
Prepayments	996,910	578,216	1,575,126
Total current assets	3,759,901	331,723	4,091,624
Total assets	18,838,598	331,723	19,170,321
Accumulated deficit	(176,018,660)	331,723	(175,686,937)
Total shareholders' equity attributable to owners of the company	12,704,528	331,723	13,036,251
Total equity and liabilities	18,838,598	331,723	19,170,321

Revised Consolidated Statement of Profit or Loss and Other Comprehensive Loss

	Year ended December 31, 2021		
	As Reported	Adjustment	As Revised
	(in CHF)		
Other income	460,710	(246,493)	214,217
Research and development	(8,939,037)	578,216	(8,360,821)
Total operating expenses	(15,137,338)	331,723	(14,805,615)
Operating loss	(17,099,793)	331,723	(16,768,070)
Loss before tax	(17,368,546)	331,723	(17,036,823)
Net loss attributable of owners of the Company	(17,390,166)	331,723	(17,058,443)
Total comprehensive loss attributable to owners of the Company	(17,124,410)	331,723	(16,792,687)
Basic and diluted loss per share	(26.26)	0.50	(25.76)

Basic and diluted loss per share as presented in the financial statements as of December 31, 2021, prior to the one-for-twenty reverse share split on October 25, 2022 was CHF 1.31, and the revised number would have been CHF 1.29.

Revised Consolidated Statement of Cash Flows

We revised our consolidated statement of cash flows for the year ended December 31, 2021. There was no impact on net cash used in operating activities.

	Year ended December 31, 2021		
	As reported	Adjustment	As revised
	(in CHF)		
Net loss	(17,390,166)	331,723	(17,058,443)
Changes in:			
Trade and other receivables	(586,612)	246,493	(340,119)
Prepayments	(719,321)	(578,216)	(1,297,537)
Cash used in operating activities	(13,627,738)	—	(13,672,738)

Liquidity and Capital Resources

Since inception, we have incurred significant operating losses. Only in 2021 we started to generate revenue. We have financed our operations through the public offerings of our common shares, private placements of equity securities and short-term loans.

Cash flows

Comparison of the six months ended June 30, 2022 and 2021

The table below summarizes our cash flows for the six months ended June 30, 2022 and 2021:

	Six months ended	
	June 30,	
	2022	2021
	(in thousands of CHF)	
Net cash used in operating activities	(5,584)	(4,919)
Net cash used in investing activities	(1,533)	(1,989)
Net cash from financing activities	6,542	3,845
Net effect of currency translation on cash	(36)	271
Cash and cash equivalents at beginning of the period	984	11,259
Cash and cash equivalents at end of the period	373	8,467

Comparison of the years ended December 31, 2021 and 2020

The table below summarizes our consolidated statement of cash flows for the years ended December 31, 2021 and 2020:

	Year ended December 31,	
	2021	2020
	(in thousands of CHF)	
Net cash used in operating activities	(13,673)	(4,844)
Net cash used in investing activities	(3,505)	(2,315)
Net cash from financing activities	6,614	16,961
Net effect of currency translation on cash	289	72
Cash and cash equivalents at the beginning of the period	11,259	1,385
Cash and cash equivalents at the end of the period	984	11,259

The increase in cash used in operating activities from CHF 4.8 million in 2020 to CHF 13.7 million in 2021 primarily reflects the increase in research and development activities, the increase in headcount, the market launch of Bentrio[®] as well as the related increase in net working capital.

Cash used in investing activities increased from CHF 2.3 million in 2020 to CHF 3.5 million in 2021. The increase is primarily due to higher purchases of intangible assets related to AM-125 as well as the payment of the cash component of the Trasir acquisition price.

The cash inflow from financing activities decreased from CHF 17.0 million in 2020 to CHF 6.6 million in 2021 due to lower proceeds from equity issues and the exercise of warrants. Also, in 2020 we had obtained CHF 1.5 million through the provision of the FiveT convertible loan.

Comparison of the years ended December 31, 2020 and 2019

The table below summarizes our consolidated statement of cash flows for the years ended December 31, 2020 and 2019:

	Year ended December 31,	
	2020	2019
	(in thousands of CHF)	
Net cash used in operating activities	(4,844)	(8,393)
Net cash used in investing activities	(2,315)	(3,001)
Net cash from financing activities	16,961	7,378
Net effect of currency translation on cash	72	8
Cash and cash equivalents at the beginning of the period	1,385	5,393
Cash and cash equivalents at the end of the period	11,259	1,385

The decrease in cash used in operating activities from CHF 8.4 million in 2019 to CHF 4.8 million in 2020 reflects the impact of lower operating expenses primarily driven by lower project activities as the COVID-19 pandemic weighed on enrollment rates for the TRAVERS trial with AM-125, the conclusion of the Phase 1b trial with AM-201 and lower consultancy costs.

Cash used in investing activities decreased from CHF 3.0 million in 2019 to CHF 2.3 million in 2020. The decrease is due to lower investments in intangible assets in 2020.

The cash inflow from financing activities increased from CHF 7.4 million to CHF 17.0 million due to higher proceeds from equity issues, the exercise of warrants as well the provision of the FiveT convertible loan.

Cash and funding sources

On December 28, 2022, the Company entered into a loan agreement with a private investor (“Private Lender 1”), pursuant to which Private Lender 1 has agreed to loan to the Company an aggregate of CHF 250,000.00 (“December 2022 Loan Agreement 1”), which loan bears interest at the rate of 5% per annum and matures as of May 30, 2023. The Company agreed to grant to Private Lender 1 warrants to purchase an aggregate 33,700 common shares. Such warrants will be exercisable immediately at an exercise price of CHF 4.4512 per share, may be exercised up to five years from the date of issuance and may be exercised on a cashless basis in certain circumstances specified therein.

On December 28, 2022, the Company entered into a loan agreement with a private investor (“Private Lender 2”), pursuant to which Private Lender 2 has agreed to loan to the Company an aggregate of CHF 100,000.00 (“December 2022 Loan Agreement 2” and, together with December 2022 Loan Agreement 1, the “December 2022 Loan Agreements”), which loan bears interest at the rate of 5% per annum and matures as of May 30, 2023. The Company agreed to grant to Private Lender 2 warrants to purchase an aggregate 13,480 common shares. Such warrants will be exercisable immediately at an exercise price of CHF 4.4512 per share, may be exercised up to five years from the date of issuance and may be exercised on a cashless basis in certain circumstances specified therein. The December 2022 Loan Agreements used the same form of agreement as the September 2022 Loan Agreement and related warrants, other than the applicable principal amount, maturity date and warrant exercise price and amount.

On December 5, 2022, we entered into a purchase agreement (the “2022 LPC Purchase Agreement”) and a registration rights agreement (the “Registration Rights Agreement”) with Lincoln Park Capital Fund, LLC (“Lincoln Park” or “LPC”), pursuant to which Lincoln Park has agreed to purchase from us, from time to time, up to \$10,000,000 of our common shares, subject to certain limitations set forth in the 2022 LPC Purchase Agreement, during the 24-month term of the 2022 LPC Purchase Agreement following December 28, 2022 (the “Commencement Date”). As consideration for Lincoln Park’s irrevocable commitment to purchase common shares upon the terms of and subject to satisfaction of the conditions set forth in the 2022 LPC Purchase Agreement, the Company agreed to issue 50,000 common shares immediately to Lincoln Park as commitment shares. Pursuant to the terms of the Registration Rights Agreement, we filed with the SEC a registration statement on Form F-1 to register for resale under the Securities Act of 1933, as amended (the “Securities Act”), common shares that we may elect to sell to Lincoln Park from time to time from and after the Commencement Date under the 2022 LPC Purchase Agreement.

From and after the Commencement Date, under the 2022 LPC Purchase Agreement, on any business day selected by us on which the closing sale price of our common shares exceeds a floor price of \$0.25, subject to adjustment as set forth in the 2022 LPC Purchase Agreement, and all purchased common shares subject to all prior Regular Purchases (as defined below) have theretofore been received by Lincoln Park, we may direct Lincoln Park to purchase up to 15,000 common shares on the applicable purchase date (a “Regular Purchase”), which maximum number of shares may be increased to certain higher amounts up to a maximum of 30,000 common shares, if the market price of our common shares at the time of the Regular Purchase equals or exceeds \$10.00 (such share and dollar amounts subject to proportionate adjustments for share splits, reverse share splits, recapitalizations and other similar transactions as set forth in the Purchase Agreement), provided that Lincoln Park’s purchase obligation under any single Regular Purchase shall not exceed \$1,500,000. The purchase price of common shares we may elect to sell to Lincoln Park under the 2022 LPC Purchase Agreement in a Regular Purchase, if any, will be based on prevailing market prices of our common shares immediately preceding the time of sale as set forth in the 2022 LPC Purchase Agreement. In addition to Regular Purchases, the Company may also direct Lincoln Park to purchase other amounts of our common shares in “accelerated purchases” and in “additional accelerated purchases” under the terms set forth in the 2022 LPC Purchase Agreement.

Lincoln Park has no right to require us to sell any common shares to Lincoln Park, but Lincoln Park is obligated to make purchases as the Company directs, subject to certain conditions. There is no maximum on the price per share that Lincoln Park must pay for our common shares that we may elect to sell to Lincoln Park pursuant to the 2022 LPC Purchase Agreement. In all instances, the Company may not sell common shares to Lincoln Park under the 2022 LPC Purchase Agreement to the extent that the sale of shares would result in Lincoln Park beneficially owning more than 4.99% of our common shares. As of March 7, 2023, we have issued a total of 140,000 of our common shares to LPC for an aggregate amount of USD 379,725 under the 2022 LPC Purchase Agreement.

On October 21, 2022, the Company announced a process for the sale of its inner ear therapeutics legacy assets to a European family office (the “Buyer”). Under the previously announced two-stage transaction, the Buyer was to acquire for cash consideration of \$2.2 million (i) 100% of the share capital of Zilentin AG, one of Altamira’s inner ear subsidiaries, and (ii) an option to acquire all additional inner ear companies for up to \$27 million in a second step payment, as well as milestone payments of up to \$55 million plus royalty payments. The Company extended the deadline date for the first step to December 30, 2022; however the Buyer was not able to secure financing and the arrangement has terminated. As the Buyer remains interested in the transaction, discussions continue, however, there can be no assurance that a transaction will be completed on the terms described or at all. The Company also continues to pursue a divestiture or partnering transaction for the inner ear assets with other parties.

On September 9, 2022, the Company entered into a loan agreement with FiveT Investment Management Ltd. (“FiveT IM”), Dominik Lysek and Thomas Meyer, the Company’s CEO (the “Lenders”), pursuant to which the Lenders have agreed to loan to the Company an aggregate of CHF 600,000.00 (the “September 2022 Loan Agreement”), which Loan bears interest at the rate of 5% per annum and matures as of March 31, 2023. The Company agreed to issue to the Lenders warrants to purchase an aggregate 41,666 common shares. Such warrants became exercisable immediately at an exercise price of CHF 7.20 per share, may be exercised up to five years from the date of issuance and may be exercised on a cashless basis in certain circumstances specified therein. Mr. Meyer lent CHF 200,000 of the total principal amount.

On February 4, 2022, the Company entered into a convertible loan agreement (the “FiveT Loan”) with FiveT Investment Management Ltd., or FiveT IM, an affiliate of FiveT Capital Holding Ltd., or FiveT, pursuant to which FiveT IM agreed to loan to the Company CHF 5,000,000, which loan bears interest at the rate of 10% per annum. On January 26, 2023 and on or before the date of this prospectus, the Company and FiveT IM entered into (or will enter into, as the case may be) amendments to the FiveT Loan (collectively, the “FiveT Loan Amendment”), which amendment (i) extends the maturity date of the FiveT Loan to March 15, 2023 (which was subsequently amended on March 9, 2023 to March 31, 2023); (ii) provides that the Company may repay amounts owed under the FiveT Loan prior to maturity with no penalty or premium; (iii) provides that in the event of a public or private offering (a “Qualifying Offering”) by the Company of common shares (other than through an equity line or at-the-market program), including this offering, the Company will make a partial repayment of the principal amount of the FiveT Loan comprised of (A) \$1,000,000 in cash and (B) newly issued common shares in an amount equaling 9.9% of the total outstanding common shares post-issuance and after giving effect to such offering, with such common shares being valued for purposes of such repayment at the offering price per common share in such offering (the “Qualifying Offering Price”), upon the closing of the offering (including any warrant coverage provided in such Qualifying Offering); and (iv) provides that upon the closing of the offering, the Company shall have the option to cause FiveT IM to convert the remaining outstanding amount of the FiveT Loan after the repayment described in (iii) above into a pre-funded warrant (the “FiveT Pre-Funded Warrant”), having an exercise price of CHF 0.01 per common share, giving FiveT IM the right to purchase a number of common shares equal to (A) the total remaining outstanding amount of the FiveT Loan divided by (B) the Qualifying Offering Price less CHF 0.01, plus warrant coverage, if any is provided in such Qualifying Offering, on the common shares underlying the FiveT Pre-Funded Warrant. The FiveT Pre-Funded Warrant will provide that until February 21, 2024, FiveT IM may cause the Company to redeem for cash all or portions of the FiveT Pre-Funded Warrant (and related warrant coverage) using up to 40% of the cash proceeds from certain out-licensing or divestiture transactions to the extent completed by the Company, with the amount of the FiveT Pre-Funded Warrant being redeemed equal to (A) the desired redemption amount divided by (B) the Qualifying Offering Price less CHF 0.01. Accordingly, upon the closing of this offering, the Company will repay in cash \$1,000,000 of the principal amount of the FiveT Loan, issue to FiveT IM 890,261 common shares, exercise its option to cause FiveT IM to convert the remaining balance of the FiveT Loan by issuing FiveT Pre-Funded Warrants to purchase an aggregate of 2,577,600 common shares and issue to FiveT IM warrants, identical to the Common Warrants (the “FiveT Common Warrants”) to purchase an aggregate of 3,467,860 common shares. The respective share amounts are based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, and assume no sale of Pre-Funded Warrants in this offering.

On December 3, 2020, the Company entered into securities purchase agreements with several institutional investors for the purchase and sale of 100,000 common shares at an offering price of USD 80.00 per share, pursuant to a registered direct offering. The net proceeds of the offering were approximately USD 7.3 million.

On September 8, 2020, FiveT Capital Holding Ltd., provided a convertible loan to Altamira Medica AG, 100% subsidiary. The loan had a principal amount of CHF 1.5 million, a duration of 18 months, and carried an interest rate of 8% p.a. Under the terms of the agreement, FiveT had the right to convert the loan or parts thereof including accrued interest into common shares of either Altamira Medica AG or the Company, subject to additional provisions and certain restrictions. On December 2, 2020, FiveT converted part of the loan and on March 4, 2021 the remaining outstanding amount into common shares of the Company, thus retiring the loan.

On April 23, 2020, the Company entered into a purchase agreement (the “2020 Commitment Purchase Agreement”) and a Registration Rights Agreement with Lincoln Park Capital Fund, LLC. Pursuant to the purchase agreement, LPC agreed to subscribe for up to USD 10,000,000 of our common shares over the 30-month term of the purchase agreement. Through June 30, 2022, we issued a total of 165,000 of our common shares to LPC for an aggregate amount of USD 2,806,605 under the 2020 Commitment Purchase Agreement. During the six months ended June 30, 2022, we issued 105,000 of our common shares to LPC for an aggregate amount of USD 1,698,450 under the 2020 Commitment Purchase Agreement, and as of the date of this report, we have issued a total of 325,000 of our common shares to LPC for an aggregate amount of USD 4,003,820 under the 2020 Commitment Purchase Agreement.

On May 15, 2019, the Company completed a public offering of (i) 22,000 common shares, together with warrants to purchase 22,000 common shares, and (ii) 86,064 pre-funded warrants, with each pre-funded warrant exercisable for one common share, together with warrants to purchase 86,064 common shares, including 5,500 common shares and warrants to purchase 5,500 common shares sold pursuant to a partial exercise by the underwriters of the underwriters’ over-allotment option (the “May 2019 Registered Offering”). The exercise price for the pre-funded warrants is CHF 0.20 per common share and for the warrants is CHF 86.80. The net proceeds to us from the May 2019 Registered Offering were approximately USD 7.6 million, after deducting underwriting discounts and other offering expenses payable by us. In December 2020, 63,192 warrants were exercised, leaving 44,872 warrants outstanding as of December 31, 2020. These remaining warrants were exercised in March 2021.

On November 30, 2018, the Company entered into a sales agreement, as amended (the “A.G.P. Sales Agreement”) with A.G.P./Alliance Global Partners (“A.G.P.”). Pursuant to the terms of the A.G.P. Sales Agreement, the Company may offer and sell its common shares, from time to time through A.G.P. by any method deemed to be an “at-the-market” offering as defined in Rule 415(a)(4) promulgated under the Securities Act. Pursuant to the A.G.P. Sales Agreement, the Company may sell common shares up to a maximum aggregate offering price of USD 25.0 million. As of March 7, 2023, the Company has sold a total of 1,381,943 common shares for an aggregate offering price of USD 12.1 million pursuant to the A.G.P. Sales Agreement.

Due to the COVID pandemic, Swiss banks granted special COVID-19 loans under certain conditions with a guarantee by the Swiss Government. Our company was eligible for a loan of CHF 50,000, which was granted on March 26th, 2020. The loan was interest-free and could be repaid at any time with a maximum term of five years. We repaid the loan on June 16, 2021.

We have no other ongoing material financial commitments, such as lines of credit or guarantees that are expected to affect our liquidity over the next five years, other than leases.

We confirm that we do not hold any deposits or securities or maintain any accounts at, or have any other banking relationship with, Silicon Valley Bank or Signature Bank.

The table below summarizes our sources of financing for the years ended December 31, 2021, 2020 and 2019.

	Equity Capital and Preference Shares	Loans	Total
	(in thousands of CHF)		
2021	6,686	-	6,686
2020	15,438	1,550	16,988
2019	8,845	-	8,845
Total	30,969	1,550	32,519

We have no other ongoing material financial commitments, such as lines of credit or guarantees that are expected to affect our liquidity over the next five years, other than leases.

Funding requirements; going concern

The Company has incurred recurring losses and negative cash flows from operations since inception and it expects to generate losses from operations for the foreseeable future primarily due to research and development costs for its potential product candidates. We expect our research and development expenses to remain significant as we advance or initiate the pre-clinical and clinical development of AM-401, AM-411 or any other product candidate. We will need additional funding. We expect that our funding requirements for operations and financial obligations until the end of 2023 will amount to CHF 17 to 19 million, assuming that CHF 4.5 million under the FiveT Loan is converted into common shares and/or the FiveT Pre-Funded Warrant and FiveT Common Warrants upon the closing of this offering. As part of our strategic repositioning, we are aiming to partner or divest our traditional development projects in neurotology, rhinology and allergology, which may provide us with additional sources of funding.

Accordingly, we expect that we will require significant capital in addition to the net proceeds of this offering. To the extent that we will be unable to generate sufficient cash proceeds from the planned divestiture or partnering of our legacy assets or other partnering activities, we will need substantial additional financing to meet these funding requirements. These factors raise substantial doubt about the Company's ability to continue as a going concern. The financial statements included in this prospectus have been prepared on a going concern basis, which contemplates the continuity of normal activities and realisation of assets and settlement of liabilities in the normal course of business. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

As at March 7, 2023, we have warrants outstanding, which are exercisable for an aggregate of 99,171 common shares at a weighted average exercise price of \$57.60 per share, an equity commitment to sell up to \$10.0 million of additional common shares to LPC pursuant to the 2022 LPC Purchase Agreement, less an aggregate of \$379,725 of common shares that have been sold through March 7, 2023 under such agreement, and an at-the-market offering program pursuant to the A.G.P. Sales Agreement for sales of up to \$12.9 million of additional common shares.

We have based our estimate of funding requirements on assumptions that may prove to be wrong, and we could use our capital resources sooner than we currently expect. Our future funding requirements will depend on many factors, including but not limited to:

- the scope, rate of progress, results and cost of our clinical trials, nonclinical testing, and other related activities;
- the cost of manufacturing clinical supplies, and establishing commercial supplies, of our product candidates and any product that we may develop;
- the number and characteristics of product candidates that we pursue;
- the cost, timing, and outcomes of regulatory approvals;
- the cost and timing of establishing sales, marketing, and distribution capabilities; and
- the terms and timing of any collaborative, licensing, and other arrangements that we may establish, including any required milestone and royalty payments thereunder.

We expect that we will require additional funding to complete our development programs with AM-125, AM-AM-301, AM-401 and AM-411, obtain regulatory approval for them and to commercialize our product candidates AM-125, AM-401, AM-411 or any other product candidate and to further advance the market roll-out of Bentrico[®]. If we receive regulatory approval for AM-125, AM-401 or AM-411, and if we choose not to grant any licenses to partners, we expect to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution, depending on where we choose to commercialize. Additional funds may not be available on a timely basis, on favorable terms, or at all, and such funds, if raised, may not be sufficient to enable us to continue to implement our long-term business strategy. If we are not able to raise capital when needed, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

In addition to this offering, the Company will seek to secure additional capital in the future through equity or debt financings, partnerships, collaborations, or other sources to carry out the Company's planned development activities. If additional capital is not available when required, the Company may need to delay or curtail its operations until such funding is received. Various internal and external factors will affect whether and when the Company's product candidates become approved for marketing and successful commercialization. The regulatory approval and market acceptance of the Company's product candidates, length of time and cost of developing and commercializing these product candidates and/or failure of them at any stage of the approval process will materially affect the Company's financial condition and future operations. Such matters are not within the control of the Company and thus all associated outcomes are uncertain.

We may raise additional capital through the sale of equity or convertible debt securities. In such an event, your ownership interest will be diluted, and the terms of these new securities may include liquidation or other preferences that adversely affect your rights as a holder of our common shares.

Contractual Obligations and Commitments

The following table presents information relating to our contractual obligations as of June 30, 2022:

	Payments Due by Period			Years Total
	Less Than 1 Year	Between 1 and 3 Years	Between 3 and 5 Years	
Convertible loan (1)	5,000	—	—	5,000
Lease obligations (2)	3	—	—	3
Total	5,003	—	—	5,003

- (1) On February 4, 2022, the Company entered into a convertible loan agreement with FiveT Investment Management Ltd., as amended on January 26, 2023, March 9, 2023 and on or before the date of this prospectus. Under such amended agreement, the loan will be extinguished upon the closing of this offering through (i) the payment of USD 1,000,000, (ii) the issuance of an assumed 890,261 common shares to FiveT IM, (iii) the issuance of the FiveT Pre-Funded Warrant to purchase 2,577,600 common shares, at an exercise price of CHF 0.01 per common share, and (iv) the issuance of the FiveT Common Warrants, identical to the Common Warrants, to purchase an aggregate of 3,467,860 common shares, based on an assumed public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, assuming no sale of Pre-Funded Warrants in this offering. The loan bears interest at the rate of 10% and matures on March 31, 2023, if not otherwise converted before maturity.
- (2) Lease obligations consist of payments pursuant to a short-term lease agreement not accounted for on the balance sheet. The lease term is indefinite and can be terminated with a six month notice period.

On September 9, 2022, the Company entered into a loan agreement with FiveT Investment Management Ltd., Dominik Lysek and Thomas Meyer, the Company's CEO, for an aggregate principal amount of CHF 600,000. The loan bears interest at the rate of 5% and matures as of March 31, 2023. On December 28, 2022, the Company entered into two loan agreements with private investors for an aggregate principal amount of CHF 350,000. The loans bears interest at the rate of 5% and mature as of May 30, 2023.

Under the terms of our collaboration and license agreement with Xigen relating to AM-111 (Sonsuvi[®]), we are obliged to make development milestone payments on an indication-by-indication basis of up to CHF 1.5 million upon the successful completion of a Phase 2 clinical trial and regulatory milestone payments on a product-by-product basis of up to CHF 2.5 million, subject to a mid-twenties percentage reduction for smaller indications, e.g., those qualifying for orphan drug status, upon receiving marketing approval for a product. The milestones are not included in the table above as they have not met the recognition criteria for provisions and the timing of these is not yet determinable as it is dependent upon the achievement of earlier mentioned milestones.

Under the terms of the asset purchase agreement with Otifex Therapeutics Pty Ltd, we made a one-time, final development milestone payment of USD 100,000 related to AM-125 in March 2022, with no obligations due going forward.

Off-Balance Sheet Arrangements

As of the date of this discussion and analysis, we do not have any, and during the periods presented we did not have any, off-balance sheet arrangements except for the short-term lease mentioned in "Item 5—Operating and Financial Review and Prospects-F. Tabular disclosure of contractual obligations" in our most recent Annual Report on Form 20-F.

Quantitative and Qualitative Disclosures About Market Risk

Credit Risk

We manage credit risk on a group basis. Credit risk arises from cash and cash equivalents and deposits with banks, as well as from other receivables. Our policy is to invest funds in low risk investments including interest bearing deposits. Only independent banks and financial institutions are used and banks with which we currently hold term deposits have a minimum S&P rating of "A". Receivables are not past due and not impaired and include only well-known counterparties.

We hold cash and cash equivalents in our principal operating currencies (CHF, USD, EUR and AUD).

Market Risk

In the ordinary course of our business activities, we are exposed to various market risks that are beyond our control, including fluctuations in foreign exchange rates, and which may have an adverse effect on the value of our financial assets and liabilities, future cash flows and profit. As a result of these market risks, we could suffer a loss due to adverse changes in foreign exchange rates. Our policy with respect to these market risks is to assess the potential of experiencing losses and the consolidated impact thereof, and to mitigate these market risks.

Currency Risk

We operate internationally and are exposed to foreign exchange risk arising from various exposures, primarily with respect to the U.S. Dollar and Euro. Foreign exchange risk arises from future commercial transactions, recognized assets and liabilities and net investments in foreign operations. To manage foreign exchange risk we maintain foreign currency cash balances to cover anticipated future purchases of materials and services in foreign currencies. We do not hedge our foreign exchange risk.

As of December 31, 2021, a 5% increase or decrease in the USD/CHF exchange rate with all other variables held constant would have resulted in a CHF 77,827 (2020: CHF 455,241) increase or decrease in the net result. Also, a 5% increase or decrease in the EUR/CHF exchange rate with all other variables held constant would have resulted in a CHF 117,247 (2020: CHF 13,648) increase or decrease in the net annual result.

We have subsidiaries in the United States, Ireland and Australia, whose net assets are exposed to foreign currency translation risk. Due to the small size of these subsidiaries the translation risk is not significant.

Significant Accounting Policies and Use of Estimates and Judgment

Our management's discussion and analysis of our financial condition and results of operations is based on our financial statements, which have been prepared in accordance with IFRS. The preparation of these financial statements requires us to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

While our significant accounting policies are more fully described in the notes to our audited consolidated financial statements appearing elsewhere in this prospectus, we believe that the following accounting policies are the most critical to aid you in fully understanding and evaluating our financial condition and results of operations.

Intangible assets

Research and development

The project stage forms the basis for the decision as to whether costs incurred for the Company's development projects can be capitalized. For the AM-125 program, given the current stage of the development project, the nature of the development approach and the fact that there is an existing market for oral betahistine, direct development expenditures have been capitalized, including certain expenses related to the patenting of intellectual property.

Intellectual property-related costs for patents are part of the expenditure for the research and development projects. Therefore, registration costs for patents are expensed when incurred as long as the research and development project concerned does not meet the criteria for capitalization.

Licenses, Intellectual Property and Data rights

Intellectual property rights that are acquired by the Company are capitalized as intangible assets if they are controlled by the Company, are separately identifiable and are expected to generate future economic benefits, even if uncertainty exists as to whether the research and development will ultimately result in a marketable product. Consequently, upfront and milestone payments to third parties for the exclusive use of pharmaceutical compounds in specified areas of treatment are recognized as intangible assets.

Measurement

Intangible assets acquired that have finite useful lives are measured at cost less accumulated amortization and any accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognized in profit or loss as incurred.

Amortization

All licenses of the Company have finite lives. Amortization will start once the Company's intangible assets are available for use. Amortization of licenses is calculated on a straight-line basis over the period of the expected benefit or until the license expires. The estimated useful life of the Company's licenses is 10 years from the date first available for use or the remaining term of patent protection. The Company assesses at each balance sheet date whether intangible assets which are not yet ready for use are impaired.

Income tax

Income tax expense comprises current and deferred tax. It is recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in other comprehensive income/loss, or OCI.

Current tax

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to tax payable or receivable in respect of previous years. It is measured using tax rates enacted or substantively enacted at the reporting date. Taxable profit differs from "loss before tax" as reported in the consolidated statement of profit or loss and other comprehensive loss because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible.

Deferred tax

Deferred income tax is recognized, using the balance sheet liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred tax is not recognized for:

- temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss;
- temporary differences related to investments in subsidiaries to the extent that the Company is able to control the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future; and
- taxable temporary differences arising on the initial recognition of goodwill.

Deferred income tax is determined using tax rates and laws that have been enacted or substantively enacted by the balance sheet date and are expected to apply when the related deferred income tax asset is realized or the deferred income tax liability is settled.

Deferred income tax assets are recognized to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilized. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off tax assets against tax liabilities and when they relate to income taxes levied by the same taxation authority and the Company intends to settle its tax assets and liabilities on a net basis.

Employee benefits

The Company maintains a pension plan for all employees employed in Switzerland through payments to an independent collective foundation. Under IFRS, the pension plan qualifies as a defined benefit plan. There are no pension plans for the subsidiaries in Ireland, Australia and the United States.

The Company's net obligation in respect of defined benefit plans is calculated by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods, discounting that amount and deducting the fair value of any plan assets.

The recognized asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. In order to calculate the present value of economic benefits, consideration is given to any minimum funding requirements.

Remeasurements of the net defined benefit liability, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognized immediately in OCI. The Company determines the net interest expense (income) on the net defined benefit liability (asset) for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period to the then-net defined benefit liability (asset), taking into account any changes in the net defined benefit liability (asset) during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

Share-based compensation

Share Options

The Company maintains a share-based payment plan in the form of a stock option plan for its employees, members of the Board of Directors as well as key service providers. Share options are granted at the Board's discretion without any contractual or recurring obligations.

The share-based compensation plan qualifies as an equity settled plan. The grant-date fair value of share-based payment awards granted to employees is recognized as an expense, with a corresponding increase in equity, over the period that the employees become unconditionally entitled to the awards. Under the Company's equity incentive plan (the "Equity Incentive Plan" or "EIP") adopted in August 2014 and amended in April 2017 and June 2019, 50% of granted share options granted to employees vest after a period of service of two years from the grant date and the remaining 50% vest after a period of service of three years from the grant date. Share options granted to members of the Board of Directors from 2016 onwards vest after a period of one year after the grant date.

The amount recognized as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, such that the amount ultimately recognized as an expense is based on the number of awards that meet the related service and non-market performance conditions at the vesting date. Share-based payments that are not subject to any further conditions are expensed immediately at grant date. In the year the options are exercised the proceeds received net of any directly attributable transaction costs are credited to share capital (par value) and share premium.

Valuation of share options

The fair value of our share options is determined by our Management and our Board of Directors and takes into account numerous factors to determine a best estimate of the fair value of our share options as of each grant date.

Option pricing and values are determined based on the Black Scholes option pricing model, and assumptions are made for inputs such as volatility of our common shares and the risk-free rate.

Recent Accounting Pronouncements

See Note 4 to our audited financial statements included in our most recent Annual Report on Form 20-F for a full description of recent accounting pronouncements, including the expected dates of adoption and effects on the Company's financial condition, results of operations and cash flows.

BUSINESS

Overview

We are a clinical-and commercial-stage biopharmaceutical company developing therapeutics that address important unmet medical needs. We are currently active in two areas: the development of RNA therapeutics for extrahepatic therapeutic targets (OligoPhore™ / SemaPhore™ platforms; AM-401 for the treatment of KRAS driven cancer, AM-411 for the treatment of rheumatoid arthritis; preclinical), and nasal sprays for protection against airborne allergens, and where approved, viruses (Bentrio®; commercial) or the treatment of vertigo (AM-125; Phase 2). We have announced our intention to reposition the Company around RNA therapeutics while exploring strategic options to either divest our non-RNA traditional businesses or partner them with one or several other companies. In particular, we have announced that we are in active discussions, including soliciting offers, for the partnering of Bentrio® for North America, Europe and other key markets and have been active in the process of selling our inner ear therapeutics assets.

Strategy

Our goal is to become a leading biomedical company focused on developing and commercializing RNA delivery technology. We believe that the use of RNA therapeutics - be it siRNA, mRNA or other types - to control the expression of disease-relevant genes holds great promise. By engaging targets that are otherwise 'undruggable' by small molecules and proteins, whole new avenues are expected to open up with RNA therapeutics for treating intractable diseases. However, delivering RNA therapeutics into the right cell of the right tissue has been one of the key challenges preventing their more widespread adoption so far.

So far, most RNA therapeutics have been directed at the liver using delivery platforms based on lipid nanoparticles or GalNAc, an amino sugar derivative of galactose. In contrast, delivery to non-liver (that is extrahepatic) tissues has been largely elusive so far. Our proprietary peptide polyplex platform OligoPhore™ and its equivalent SemaPhore™ can engage any type of short interfering RNA (siRNA) or messenger RNA (mRNA), respectively, in rapid self-assembly. The technology is designed to allow for systemic or local delivery of RNA payloads with efficient cellular uptake and extensive endosomal release. Importantly, it enables delivery to target tissues outside the liver, creating the potential for developing RNA-based therapies for a range of indications with substantial unmet need.

The key elements of our strategy are:

- **Demonstrate preclinical and early clinical proof of concept with OligoPhore™ in two lead indications.** Based on positive results obtained with OligoPhore™ delivering various siRNA payloads in more than ten different murine disease models, we have selected two therapeutic targets as the first indications in which we will seek to demonstrate early clinical proof of concept. With project AM-401 we are targeting KRAS driven cancer such as colorectal cancer or pancreatic cancer, and with project AM-411 we are targeting rheumatoid arthritis. There is a high unmet medical need for both of these indications.
- **Leverage OligoPhore™ / SemaPhore™ platform through partnering.** Considering the suitability of our peptide polyplex platform for multiple therapeutic indications especially in oncology and immune diseases but also elsewhere, and for various types of therapeutics nucleotides, we aim to leverage the platform through collaborations with other biopharmaceutical companies and the out-licensing of technology for specific indications (including projects AM-401 and AM-411). In this way, we intend to become a delivery platform company.
- **Focus activities on RNA delivery technology by divesting or partnering our non-RNA businesses.** As we aim to expand our activities in RNA delivery technology, we intend to dedicate our full resources and management focus on it. Although we continue to believe that our businesses in neurology, rhinology and allergology hold great promise, we consider that the related assets should be rather developed outside our Company. Any proceeds from their divestiture or partnering shall be applied to growing the activities in RNA therapeutics.

Delivering RNA therapeutics to extrahepatic tissues

OligoPhore™ / SemaPhore™ is a versatile platform for systemic or local delivery of oligonucleotides such as siRNA (small interfering ribonucleic acid) or mRNA (messenger RNA) into target cells, using systemic or local administration. Using the same technology, OligoPhore™ designates the platform for oligonucleotides, whereas SemaPhore™ designates the platform for mRNA. It is based on a proprietary 21 amino acid peptide that can engage any type of RNA in rapid self-assembly into a polyplex. The polyplex has a size, charge, and other physical features that allow it to escape hepatic clearance and thus to reach other target tissues than the liver. OligoPhore™ / SemaPhore™ protects the RNA payload from degradation in the circulation and allows for rapid cellular uptake, while enabling pH-dependent nucleotide full endosomal escape and cytoplasmic delivery.

Effective delivery and positive treatment outcomes have been demonstrated with OligoPhore™ in more than ten diverse murine models of disease for cancer, cardiovascular, and rheumatological targets in the NF-κB family, various members of the ETS transcription factor family, and targets in the JNK and TAM pathways. With SemaPhore™, positive results have been demonstrated so far in three different murine disease models in osteoarthritis, atherosclerosis and aortic aneurysm with WNT 16, p27^{Kip1} and SOD2 as targets. All of these results have been published in peer-reviewed journals.

The preparation of the polyplex formulations is relatively straightforward. The peptide carrier rapidly condenses nucleotides within minutes by mixing at a pre-defined ratio. The interaction between RNA sequence and peptide is initially electrostatic, but importantly an exothermic process of strong hydrogen bonding takes place between the histidines and nucleic acids to markedly stabilize the polyplex. A thin coating of albumin or hyaluronic acid is used to further stabilize the system. Once the polyplex is formed it can be injected intravenously or intraperitoneally, or by any other route that reaches the circulation. The polyplex readily escapes the leaky vasculature of various pathologies and is taken up avidly by cells that are capable of macropinocytosis such as cancer cells or macrophages. However, we also have transfected endothelium, smooth muscle, and other cell types. Once in the endosome, the natural process of acidification breaks strong bonds between the RNA and the peptide to disassemble the polyplex. The released peptide interacts with the endosomal membrane to permeabilize it and release the RNA into the cytoplasm. The peptide is then diluted quickly and broken down, causing no unintended damage to the cell membrane itself.

In July 2021, we announced the selection of KRAS-driven cancer as the first and in July 2022 the selection of rheumatoid arthritis as the second therapeutic indication for our OligoPhore™ oligonucleotide delivery platform (AM-401 and AM-411). We aim to advance the AM-401 and AM-411 programs through preclinical studies with the objective of filing for an IND in 2023 and 2024, respectively. In parallel, we will seek to leverage the OligoPhore™ / SemaPhore™ through collaborations with other biopharmaceutical companies and the out-licensing of technology for specific indications.

Market for RNA therapeutics

RNA therapeutics is a rapidly emerging field of human medicine that has the potential to change the standard of care for many diseases and target previously undruggable pathways. Traditional small molecule drugs target active sites of proteins so as to inhibit or alter their function; however, only ~1.5% of the human genome encodes proteins (Damase et al., 2021), and only 10-14% of proteins have active binding sites that are “druggable” targets for small molecules (Hopkins and Groom, 2002). Thus the “druggable” targets for small molecule therapies is limited. This limitation was addressed in part by recombinant protein technology which has become a significant share of the pharmaceutical market (Damase et al., 2021). However, recombinant proteins have limitations as drugs, particularly due to size and stability issues. By contrast, nucleic-acid based strategies avoid many of these limitations as they make use of the translational machinery of the human cell.

RNA therapeutics comprise four broad categories: aptamers, antisense oligonucleotides (ASOs), RNA interference (RNAi) and messenger RNA (mRNA). Aptamers are oligonucleotide or peptide molecules that bind to a specific target molecule to inhibit signal transduction. ASOs bind to mRNA, rendering it inactive, whereas RNAi (short interfering RNA or siRNA and micro RNA or miRNA) promote the degradation of specific mRNA molecules. Rather than silencing defective genes as ASOs and RNAi do, mRNA promotes protein expression to compensate for a defective gene/protein. Regardless of the type of RNA therapeutic, delivery into target cells and tissues has proved to be a major challenge as RNA is inherently unstable and tends to show poor cellular uptake. Various delivery technologies have been developed to address these challenges, including the use of nanocarriers or bioconjugates for targeted delivery. While there has been substantial progress with delivery of RNA therapeutics to the liver, other target tissues and organs have remained difficult to reach.

In 2016, the FDA approved the first two ASO based therapeutics and in 2018 the first siRNA therapeutic. Further approvals have followed, and there is a growing number of RNA therapeutics in clinical development. With the rapid development of vaccines against COVID-19, which use mRNA to instruct muscle cells to produce the non-infectious SARS-CoV-2 spike protein to induce specific neutralizing antibodies, some key advantages of RNA-based therapeutics such as rapid design and scale-up in manufacturing have been highlighted. According to a recent report published by Allied Market Research the global market for RNA therapeutics (RNAi and ASOs) reached USD 4.9 billion in 2021 and is expected to grow to USD 25.1 billion in 2030. In another recent report by Research and Markets, it is estimated that the global market for mRNA therapeutics should grow from USD 46.7 billion in 2021 to USD 101.3 billion by 2026.

Protection against airborne viruses and allergens

With our Bentrío[®] nasal spray, we are aiming to provide protection against airborne viruses and allergens. The nose is the first organ of the respiratory system. Its main function is breathing, bringing warm humidified air into the lungs. Filtering of the air by nasal hair in the nostrils prevents large particles from entering the lungs. The interior of the nose, which is called the nasal cavity, is lined by the nasal mucosa, one of the anatomical structures which form the physical barriers of the body's immune system. These barriers provide mechanical protection from the invasion of infectious and allergenic pathogens. Sneezing is a reflex to expel unwanted particles from the nose that irritate the mucosal lining.

Through the intake of air, the nasal cavity and nasal mucosa are exposed to a variety of airborne pathogens such as viruses and bacteria and allergens such as pollen, house dust mites or animal hair. Unless they are neutralized by the immune system, these pathogens may cause infections. In case of allergens, the body may develop sensitivity to them, resulting in an inflammatory reaction including the release of certain chemicals such as histamine affecting the nasal mucosa. This inflammatory condition is called allergic rhinitis. Its main symptoms include nasal itching and sneezing, runny nose, and nasal congestion.

Market for allergic rhinitis and viral infection treatments

Allergic rhinitis is a very frequent condition. According to results from the National Health Interview Survey published in 2010 by Schiller and colleagues, roughly 7.8% of people 18 and over in the U.S. have hay fever. In 2010, 11.1 million visits to physician offices resulted with a primary diagnosis of allergic rhinitis, as shown by the National Ambulatory Medical Care Survey. Besides de-sensitization (allergen-specific immunotherapy), there is no cure for allergic rhinitis. In most cases treatment aims to relieve symptoms. Antihistamines relieve symptoms of allergic rhinitis by blocking or reducing the action of histamines, which the body releases when under attack from allergens. However, antihistamines can sometimes cause drowsiness. The most effective and safest way to prevent or decrease the allergic symptoms is to avoid, remove, or protect against exposure to airborne allergens. For 2023, the market size for “over-the-counter” allergy medicines in the U.S. is estimated by Ibis World to reach USD 3.9 billion.

Infections from airborne viruses are very common. Viruses known to spread by airborne transmission (and also other routes) include rhinoviruses (cause common cold symptoms), influenza viruses (type A, type B, H1N1), varicella viruses (cause chickenpox), measles virus, mumps virus, enterovirus, norovirus, coronaviruses among others. Worldwide and nearly year-round, human rhinovirus (HRV) is the most common cause of upper respiratory tract infection and is responsible for more than one-half of cold-like illnesses. The treatment of HRV infection remains primarily supportive, including over-the-counter products aimed at symptom relief. Revenues in the U.S. for cold and cough remedies such as antihistamines, antibiotics, decongestants, expectorants and bronchodilators were expected to exceed USD 10.8 billion in 2023. According to the U.S. Centers for Disease Control and Prevention (CDC), influenza resulted in 9-41 million illnesses, 140,000-710,000 hospitalizations and 12,000-52,000 deaths annually from 2010-2020. Protection against influenza may be achieved by seasonal vaccination (“flu shots”); in case of infection, there are a number of approved antiviral drugs available such as oseltamivir, zanamivir, peramivir or baloxavir marboxil.

The current COVID-19 pandemic has highlighted the large impact that viral infections can have on health, quality of life and economic activity. Since the outbreak began, more than 660 million people have been reported as infected and more than 6.69 million deaths have been counted globally. Thanks to massive and urgent efforts by public and private entities, vaccines could be developed in record time; in addition, the first oral antiviral treatments were approved, and dozens of other potential treatments have been under development. Although most of the population has been vaccinated in industrialized countries, a substantial number of people remain unvaccinated with even lower vaccination rates in most developing countries. It is uncertain at this point when and to what extent the COVID-19 pandemic can be ended or significantly mitigated in its effects as vaccine roll-outs take time and mutations of SARS-CoV-2 have developed which appear to reduce the protective effects of the newly developed vaccines.

Treatment of neurotologic conditions

The three most frequent neurotologic disorders are vertigo / dizziness, hearing loss and tinnitus. With AM-125, we are aiming to treat acute vestibular syndrome (AVS), which is described as sudden onset of continuous vertigo lasting days to weeks and associated with nausea, head motion intolerance, and unstable balance. The vestibular system is responsible for the sensations of balance and motion. For this, the brain receives, integrates, and analyzes information it receives from the left and right inner ear on the altitude, rotation, and linear motion of the head, visual input from the eyes and input from joint and muscle receptors (the proprioceptive system). When vestibular input from each inner ear is equal, the system is in balance, and there is no sense of movement. When inputs are unequal, the brain interprets this as movement. As a result, compensatory eye movements and postural adjustments occur to maintain balance. However, when some pathology (e.g., inflammation or trauma) disrupts signaling unilaterally, the result is an imbalance in vestibular input that can lead to vertigo.

Betahistine, the active substance of AM-125, has been used for decades for the treatment of vertigo. However, when administered orally, only small quantities of the drug actually reach the blood stream and can be distributed to the inner ear and the brain due to rapid and pronounced first pass metabolism. As a consequence of the low bioavailability, there has been significant variability in therapeutic outcomes. With AM-125, we are using intranasal delivery of betahistine.

The nasal cavity is highly vascularized and provides a large surface area for drug absorption. In addition, the nasal route allows for avoiding hepatic first-pass metabolism and degradation of a drug in the gastrointestinal tract when taken orally since the active substance will be absorbed directly into the blood circulation. Further, intranasal delivery is convenient, non-invasive and suitable for self-administration.

For our projects Keyzilen[®] (AM-101) and Sonsuvi[®] (AM-111), we are targeting specifically the cochlea, which together with the vestibule and the semicircular canals of the peripheral vestibular system forms the inner ear. The snail-shaped cochlea is the sensory organ at the periphery of the auditory system, which transmits sound along the auditory pathway up to the brain for hearing. Acute insults to the cochlea from a variety of sources - for example, loud noise, infection or insufficient blood supply - may lead to excessive levels of glutamate, the principal neurotransmitter in the cochlea as well as other pathological processes. This in turn may damage cochlear hair cells, which tune and amplify sound inside the cochlea or convert mechanical movement into neural signals, as well as cochlear neurons. Such damage may result in the symptoms of inner ear hearing loss and/or inner ear tinnitus that can be transitory as natural repair mechanisms set in or that become permanent when hair cells or neurons die or are permanently injured.

Because the cochlea is located deep inside the head and because it is separated from the middle ear by a combination of bone and membranes, the interior of the cochlea is a challenging location for drug delivery. We have chosen to deliver certain of our products via intratympanic injection across the ear drum (also known as the tympanic membrane) into the middle ear cavity. By formulating our products with biocompatible gels, we facilitate the diffusion of active substances across the round window membrane into the cochlea at clinically meaningful concentrations.

Market for neurotologic treatments

Inner ear disorders, including hearing loss, tinnitus, and vertigo, are common and often inter-related conditions. Chronic inner ear disorders such as tinnitus and hearing loss are highly prevalent. According to the National Institute on Deafness and Other Communication Disorders, or NIDCD, more than four out of ten Americans, at some point in their lives, experience an episode of dizziness significant enough to see a doctor. According to research by Saber Tehrani and colleagues published in the journal *Academic Emergency Medicine* in 2013 there were almost four million emergency room visits in 2011 in the U.S. for problems of dizziness or vertigo. According to data from the National Health and Nutrition Examination Survey published by Agrawal and colleagues in the journal *Archives of Internal Medicine* in 2013, 35.4% of the U.S. population aged 40 years and older suffered from vestibular dysfunction (i.e. failing the “Standing on Foam” test) from 2001-2004.

Also according to the NIDCD, approximately 10% of the U.S. adult population, or about 25 million Americans, have experienced tinnitus lasting at least five minutes in the past year. Additionally, according to a 2016 publication by Bhatt et al. in the journal *JAMA Otolaryngology-Head and Neck Surgery*, 21.4 million (9.6%) U.S. adults experienced tinnitus in the preceding 12 months. The NIDCD also reports that 37.5 million Americans, or 15% of the adult U.S. population, report having some trouble hearing. Epidemiological studies reveal comparable prevalence rates for Europe. Additionally, according to a 2016 publication by Hoffman et al. in the journal *JAMA Otolaryngology-Head and Neck Surgery*, the annual prevalence of speech-frequency hearing loss among adults aged 20 to 69 years was 14.1% (27.7 million) in the 2011-2012 period.

As reported by Singh & Singh in a 2012 publication in the journal of Otorhinolaryngology Clinics, there are several drugs available for the treatment of vertigo, however they were all introduced several decades ago and have only limited clinical utility. In the US, diphenhydramine, meclizine, promethazine and benzodiazepines are frequently used as vestibular suppressants; they act centrally and have a sedating effect which may impose a serious limitation when the activities of the subject require alertness. Outside the US, betahistine is frequently used as a non-sedating treatment for vertigo; it was also introduced several decades ago. As for the treatment of tinnitus or hearing loss, to our knowledge, there is currently no FDA or EMA approved drug therapy on the market.

Our Products and Product Candidates

Bentrio® (AM-301) in the protection against airborne allergens and viruses

Allergic rhinitis and upper respiratory airway infections

Through the intake of air, the mucosa-lined nasal cavity as the uppermost part of the respiratory system is exposed to a variety of airborne pathogens such as viruses and bacteria. Unless they are neutralized by the immune system, these pathogens may cause infections. Viruses known to spread by airborne transmission (and also other routes) include rhinoviruses (cause common cold symptoms), influenza viruses (type A, type B, H1N1), varicella viruses (cause chickenpox), measles virus, mumps virus, enterovirus, norovirus, coronaviruses among others.

Further, the nasal cavity is exposed to allergens such as pollen, house dust mites or animal hair. The body may develop sensitivity to such allergens, resulting in an inflammatory reaction (allergic rhinitis), including the release of certain chemicals such as histamine which affect the nasal mucosa. The main symptoms of allergic rhinitis include nasal itching and sneezing, runny nose, and nasal congestion.

The nasal mucosa is one of the anatomical structures which form the physical barriers of the body's immune system. The mucosal lining of the nasal cavity represents the outer surface of the body to the ambient air and its contents and is prepared for it as the first line of defense. These barriers provide mechanical protection from the invasion of infectious and allergenic pathogens. Nasal mucociliary clearance provides another defense mechanism: mucus secreted by the nasal mucosa traps inhaled allergens, pathogens and other particles and is then transported with the trapped matter by the ciliated cells of the respiratory epithelium to the pharynx, where it is swallowed.

Proper humidification helps to maintain the nasal mucosa's function in clearing viruses and allergens from the nasal cavity. Further protection may be achieved by wearing face masks or avoidance of exposure to potential sources of infection or allergens.

Our solution - Bentrio®

In September 2020, we announced the launch of the development of AM-301, a drug-free nasal spray for protection against airborne viruses and allergens through a newly created subsidiary, Altamira Medica Ltd. AM-301 is a gel emulsion which works by forming a protective layer on the nasal mucosa that acts as a mechanical barrier against airborne viruses allergens. The barrier consists of two elements: (1) a mucoadhesive film lining the nasal cavity and preventing contact of airborne viruses or allergens with the nasal mucosa to reduce the risk of viral infection or allergic reactions; (2) the trapping / binding of such viruses or allergens, allowing for their removal e.g., through mucociliary clearance. In addition, the product helps to humidify and thus maintain the nasal mucosa's function in clearing viruses and allergens from the nasal cavity.

The key component of AM-301 is bentonite, a naturally occurring clay. Following formulation development, we tested Bentrio® *in vitro* in a series of experiments using reconstituted human nasal epithelia infected with SARS-CoV-2 or H1N1 influenza virus. Daily treatment with AM-301, beginning right before inoculation or 24-30 hours thereafter showed significant reductions of the viral titer compared to saline treated controls. In case of SARS-CoV-2, a protective effect was observed with the original virus, the Delta variant as well as the Omicron variant.

Based on these *in vitro* results, we believe that AM-301 could help to reduce the risks of exposure from airborne transmission of SARS-CoV-2. Nasal breathing delivers approximately 70% of airflow to the lungs, and it has been established that infection with SARS-CoV-2 via the nose is a major transmission pathway for COVID-19. In January 2023 we announced top-line data from a clinical trial in acute COVID-19 ("COVAMID") The trial enrolled a total of 160 subjects who were randomized within 3 days from symptom onset at a 2:1:1 ratio to receive for 10 days either Bentrio®, modified Bentrio® (lacking one mineral component), or no treatment, followed by a 10-day observation phase. The primary efficacy endpoint was the change in PCR cycle threshold (CT). COVAMID was conducted in Bulgaria and North Macedonia. The trial showed a mean increase in the CT value from baseline to Day 11 of 15.3 for the Bentrio® group, 14.1 for the modified Bentrio® group and 13.7 for the untreated control group. An increase in the CT by 1 indicates a decrease in the nasal viral load of 50%. In the mixed model for repeated measures (MMRM) the difference in the mean change of CT of the Bentrio® group vs. the untreated and the modified Bentrio® groups to Day 11 failed to reach statistical significance (LSmeans 0.8 and 0.64; p = 0.319 and 0.427; 95% CI -0.78 to 2.38 and -0.95 to 2.23, respectively). More Bentrio® and modified-Bentrio® treated patients achieved full resolution of COVID-19 signs and symptoms by Day 11 than untreated patients (93.7 and 92.5 vs. 85.0%) and more of them were uninfected or asymptomatic at that time point (59.5 and 65.0 vs. 45.0%). The treatment was well tolerated. The incidence of adverse events in the Bentrio® group was 2.4% (mild cases only), 9.5% in the modified-Bentrio® group, and 14.0% in the untreated group (including two cases of unwitnessed sudden death after Day 11).

We believe that, based on the mode of action of Bentrio®, the product is used most effectively prophylactically. In order to obtain regulatory clearance for Bentrio® in viral infection in those countries which require supportive clinical data (which includes the US and the EU, among others), additional clinical research will have to be conducted. We currently have no plans to conduct such research on our own.

We believe that Bentrío[®] could help people suffering from allergic rhinitis by reducing their exposure to airborne allergen particles e.g., from pollens, house dust or animal hair. In 2021 we conducted an open-label randomized cross-over study with AM-301 that enrolled 36 patients with allergic rhinitis caused by grass pollen. Study participants were administered a single dose of Bentrío[®] nasal spray or hydroxypropylmethylcellulose, a comparator product, prior to controlled pollen exposure for four hours in an allergen challenge chamber. The challenge was repeated with the alternate treatment following a wash-out period. The study demonstrated a rapid onset and long durability of Bentrío[®]'s protective effect, established 510(k) substantial equivalence to the marketed comparator with superior efficacy ratings by patients and clinicians, and showed good tolerability.

In May 2022, we announced the results from a clinical trial with Bentrío[®] in house dust mite (HDM) allergic rhinitis. The trial enrolled a total of 37 patients with a history of perennial allergic rhinitis ("PAR") caused by HDM exposure. Study participants were randomized under an open label, three-period crossover design to receive either Bentrío[®] in a single or double dose, or no treatment, prior to controlled allergen exposure in an environmental exposure chamber for three hours. Bentrío[®] treatment reduced the increase in mean total nasal symptoms score (TNSS) by 1.1 points (-1.87 to -0.28 in the 95% confidence interval; $p < 0.01$) vs. no treatment. There was no meaningful difference in outcomes between a single or double puff per nostril. Bentrío[®] treatment was well tolerated.

In December 2022 we completed enrollment into a randomized controlled clinical trial (the "NASAR" trial) with Bentrío[®] in seasonal allergic rhinitis (SAR) in Australia. NASAR enrolled 100 SAR patients that were randomized at a 1:1 ratio to either receive Bentrío[®] or saline spray via self-administration three times per day, or as needed, for two weeks. Saline nasal sprays are currently the most frequently used type of drug-free treatment for SAR. The primary endpoint will be the comparison of the reflective Total Nasal Symptom Score (rTNSS) under treatment with Bentrío[®] against saline spray. In January 2023, we announced the results of an interim analysis based on data from the first 53 participants in the NASAR trial. The interim analysis showed a decrease of the rTNSS in the Bentrío[®] group from 6.7 points in the pre-treatment period to 5.1 points over the 14-day treatment period, while the saline spray group showed a decrease from 7.6 to 7.1 points. The difference of 1.55 points in favor of Bentrío was statistically significant in the ANCOVA model (LSmeans; $p = 0.015$; 95% confidence interval -2.78 to -0.32). The interim analysis further showed good tolerability both for Bentrío[®] and the comparator. Top-line data for this trial are expected later during the second quarter of 2023.

Since Bentrío[®] does not contain any active substance, it is regulated and marketed as an "over-the-counter" medical device. In May 2021, we completed the conformity assessment procedure for marketing the product in the member states of the European Union (EU), and in September 2021 we filed a 510(k) premarket notification with the FDA, for premarket clearance of Bentrío[®] as a Class II device for the intended use of promoting alleviation of mild allergic symptoms triggered by the inhalation of various airborne allergens. On June 24, 2022 we received 510(k) clearance for Bentrío[®].

AM-401 in KRAS driven cancers

KRAS driven cancers

The KRAS gene encodes the Ras protein which controls - like an "on / off switch" - cell growth, cell maturation, and cell death. Through mutations, the Ras proteins can be rendered persistently active, causing cancer cells to grow and spread in the body. Mutations of KRAS are associated with poor prognosis in several cancers, and there is a substantial body of evidence supporting the role of KRAS in the initiation and maintenance of cancer. As described by Herdeis and colleagues in a 2021 publication in the journal *Current Opinion in Structural Biology*, mutated forms of KRAS are found in one-fifth of all human cancers, including 30-35% of non-small-cell lung cancers (NSCLCs), 40% of colorectal cancers (CRCs) and 85-90% of pancreatic cancers. According to the American Cancer Society, overall, almost 150,000 new cases of KRAS mutated tumors are diagnosed in the United States alone across these three tumor types each year. It has been estimated that mutations in KRAS alone account for approximately one million deaths per year worldwide (Simanshu et al., 2017).

Since the original discovery of KRAS as an oncogene in 1982, there have been intense efforts to develop a targeted therapeutic for KRAS mutant cancers. Although the role of KRAS mutations in cancer has been known for decades, they have remained a challenging target for therapeutic interventions. KRAS was long considered undruggable, in part because its surface lacked obvious binding sites. Only recently did the FDA approve with sotorasib the first ever treatment for KRAS driven cancer. Sotorasib, a small molecule, received accelerated approval as second-line treatment for KRAS G12C-mutated NSCLC.

We are applying our OligoPhore™ technology to KRAS driven cancers for first clinical proof of concept. Our unique approach utilizes a custom-designed 21 amino acid peptide that rapidly condenses peptide and nucleotide components into a polyplex with a size, charge, and other physical features that allow it to escape hepatic clearance. The technology has the following features:

- **Stability:** siRNA is complexed in nanoparticle polyplex format, and is only released inside of cells after endosomal uptake and not in the circulation
- **Extrahepatic delivery:** the nanoparticle is not sequestered in liver, but will readily permeate inflamed pathological tissues
- **Endosomal escape:** we have co-opted the natural cellular process of endosomal acidification to disassemble the polyplex, which is followed by full release of siRNA into the cytoplasm
- **Selectivity:** the polyplex silences molecular targets in diseased tissues only
- **Tolerability:** no cellular or adaptive immune responsivity to nanoparticle components or siRNA after multiple serial doses, and no organ toxicities observed in mice after serial dosing

The therapeutic objective for AM-401 is to slow down KRAS driven tumor cell proliferation or to stop it altogether by delivering siRNA specifically inside tumor cells for gene knock down. As described by Strand and colleagues in a 2019 issue of the scientific journal *Oncotarget*, *in vitro* and *in vivo* experiments demonstrated efficient uptake of OligoPhore™ (then known as P5RHH) nanoparticles with KRAS-targeted siRNA in colorectal and pancreatic cancer cells, strong inhibition of KRAS expression, reduced viability of tumor cells and significant reduction in tumor growth and volume. Importantly, a murine model demonstrated the capacity of the OligoPhore™ platform to drive targeted delivery of the nanoparticles specifically to tumor cells.

Based on these outcomes, we started *in silico* and *in vitro* work to screen and select the most effective siRNA sequences and to optimize their properties. Our *polyKRAS^{mut}* siRNA approach allows to target different KRAS mutations and is thus polyvalent. The process of sequence selection and optimization will be followed by further *in vivo* testing. Meanwhile, we have been working on the scale up in the synthesis of the peptide base of OligoPhore™ and process development for the manufacture of the nanoparticles. We intend to review and discuss our plans for IND-enabling preclinical studies with the FDA in the context of a Pre-IND meeting. Subject to the opening of an IND (or equivalent clearance by another regulatory agency), we expect to conduct a Phase 1 clinical trial in patients with KRAS driven cancer.

AM-411 in rheumatoid arthritis

Rheumatoid arthritis

Rheumatoid arthritis (RA) is a chronic inflammatory condition causing joint swelling and pain which may also affect other areas, including the skin, eyes, brain, and cardiovascular system. In the US in 2014, approximately 1.3 million adults suffered from RA, as described by Hunter and colleagues in a 2017 issue of *Rheumatology International*. According to the World Health Organization (WHO), the autoimmune disease affects globally up to 18 million people. A study by Crowson and colleagues which was published in 2012 in the journal *Arthritis and Rheumatism* showed that RA affects 1 in 28 women and 1 in 59 men during their lifetime. There is no cure for RA; current treatments seek to manage RA with biologic and non-biologic immunosuppressants, corticosteroids and non-steroidal anti-inflammatory drugs (NSAIDs). While useful, drug resistance occurs in up to 50% of patients and systemic adverse reactions are frequent, including rash, hair loss, altered liver function, low blood cell counts, nausea, increased infections and neuropathy. New biologics targeting JAK/interleukins have been issued black box warnings by the FDA. According to a market research study by Allied Market Research, the global anti-rheumatics market is expected to grow from \$57.9 billion in 2019 to \$62.9 billion in 2027, representing the second largest therapeutic area after oncology. Adalimumab, a biologic blocking TNF which is marketed as Humira®, was #1 among RA therapeutics in 2021 and also the world's largest selling drug outside of Pfizer's COVID-19 vaccine.

AM-411 is a polyplex nanoparticle delivering siRNA to inflamed tissues to target the NF- κ B signaling pathway, a critical regulator of immune and inflammatory responses. Like AM-401, the drug product is based on our OligoPhore technology which allows for delivery of RNA payloads specifically to inflamed tissues with extensive endosomal release once inside cells, generating a new class of precision medicines with increased local efficacy and reduced systemic side effects. AM-411 comprises an optimized siRNA targeting p65, one of the main transcriptional regulators of the NF- κ B pathway and a key checkpoint in RA inflammation that has generated high interest as a target. However, given NF- κ B's ubiquitous functions, the key challenge is to induce contextual, tissue specific effects, which is not possible with classic small molecule or biologic approaches. AM-411 reduces local inflammation without affecting the NF- κ B pathway elsewhere and is less likely to generate resistance because it reduces synthesis of p65 rather than blocking the protein.

AM-411's therapeutic potential in RA has already been demonstrated in a study using a collagen antibody-induced arthritis model in mice. As described by Zhou and colleagues in a 2014 issue of the Journal of Clinical Investigation OligoPhore nanoparticles with siRNA targeting NF- κ B (p65) potently suppressed early inflammatory arthritis. The treatment effectively reduced the expression of inflammatory cytokines and cellular influx into the joints, protected against bone erosions and preserved cartilage integrity. Importantly, the treatment did not affect p65 expression in off-target organs or elicit a humoral response after serial injections.

Based on these outcomes, we started *in silico* and *in vitro* work to screen and select the most effective siRNA sequences and to optimize their properties. This will be followed by further *in vivo* testing. The AM-411 program will benefit from extensive synergies with the AM-401 program and vice versa.

AM-125 in Vestibular Disorders

Vestibular Disorders

Balance disorders are medical conditions that evoke the sensation of unsteadiness, dizziness or vertigo. Patients suffering from balance disorders are often profoundly impacted in their daily activities. Balance problems can be caused by many different health conditions, medications or anything that affects certain areas of the brain or the inner ear labyrinth. Balance disorders originating from the inner ear labyrinth include benign paroxysmal positional vertigo, or positional vertigo, labyrinthitis, vestibular neuronitis and Meniere's disease, a chronic condition characterized by severe episodic vertigo, tinnitus, and fluctuating hearing loss.

In case of vertigo, patients experience a false sensation of movement of oneself or the environment. This can be a spinning or wheeling sensation, or they simply feel pulled to one side. This may lead to imbalance, nausea or vomiting. The cause of vertigo can be an imbalance between the left and right vestibular systems in signaling position and acceleration to the brain. The symptom of vertigo may partially or fully resolve thanks to spontaneous recovery of the peripheral vestibular function and / or through compensation of the imbalance at the brain level, which is known as vestibular compensation.

The imbalance between the left and right vestibular systems and thus the sensation of vertigo may be reduced by dampening the vestibular function in the unaffected, opposite inner ear through pharmacotherapy. This minimizes the extent of the imbalance falsely interpreted as movement. Most existing therapies rely on this strategy to minimize vertigo symptoms, but also have unintended sedative effects. Examples include meclizine, benzodiazepines, dimenhydrinate or amitriptyline.

Betahistine is widely used around the world for the treatment of vestibular disorders, notably Meniere's disease and vertigo. Its development goes back to the use of intravenous histamine, which provided symptomatic relief for these disorders. Betahistine is a structural analog of histamine. It acts as a partial histamine H1-receptor agonist and, more powerfully, as a histamine H3-receptor antagonist. Betahistine has been shown to increase cochlear, vestibular and cerebral blood flow, facilitate vestibular compensation and inhibit neuronal firing in the vestibular nuclei. Unlike other drugs, it has no sedating effect. Betahistine is typically taken orally with a recommended daily dose of 24 to 48 mg, divided in 2 or 3 single doses.

Betahistine is generally recognized as a safe drug and there exists a large body of data on the pharmacology, pharmacokinetics and toxicology of the compound. As of 2017, it was approved in about 115 countries world-wide for the treatment of Meniere's disease and vestibular vertigo, but not in the United States. In 1970, the Commissioner of FDA withdrew approval of the NDA after the discovery that the submission contained unsubstantiated information about some patients in the efficacy studies upon which approval was based. Today, betahistine is available in the United States only from compounding pharmacies or through importation. Despite limited availability, a survey by Clyde and colleagues published in *Otology & Neurotology* in 2017 revealed that 56% of U.S. neurotologists and 16% of generalists use betahistine and approximately 20% of neurotologists use it often or always when treating patients with Meniere's disease.

Various studies and meta-analyses have demonstrated therapeutic benefits of betahistine in both the treatment of vertigo as well as in supporting vestibular rehabilitation. However, the evidence for therapeutic benefits is variable, and it has been suggested that efficacy could be increased with higher doses and / or longer treatment periods. It is well known that orally administered betahistine is rapidly and almost completely metabolized into 2-pyridylacetic acid, also known as 2-PAA, which lacks pharmacological activity. As a consequence, the bioavailability of oral betahistine is estimated to be very low.

Our Solution-AM-125

In February 2017, we entered into an asset purchase agreement with Otifex Therapeutics, pursuant to which we purchased various assets related to betahistine dihydrochloride in a spray formulation, which we are developing for intranasal treatment of vertigo under the product code AM-125. The assets include preclinical and clinical data as well as certain intellectual property rights. In a Phase 1 clinical trial conducted by Otifex in 40 healthy volunteers intranasal betahistine showed good tolerability and significantly higher betahistine concentrations in blood plasma than reported for oral betahistine administration.

Therapeutic rationale for AM-125 in vertigo

We are aiming to address the currently limited therapeutic utility of betahistine arising from its low oral bioavailability by avoiding first pass metabolism by monoamine oxidase. Intranasal administration of betahistine provides substantially higher bioavailability than oral administration as there is only very little monoamine oxidase activity known to occur in the nose, allowing higher quantities of betahistine to be absorbed into the blood stream and reach target histamine receptors in the inner ear and brain. As preclinical and clinical data suggest that betahistine's therapeutic effects increase with higher systemic exposure, we expect AM-125's higher bioavailability to translate into more pronounced therapeutic benefits.

Vertigo endpoints

Vertigo cannot be measured directly. Therapy typically aims to a) reduce the symptoms of vestibular dysfunction underlying vertigo and / or b) accelerate vestibular compensation and recovery. Status and therapeutic outcomes are usually assessed by a battery of tests, addressing static and dynamic deficits, balance impairment, functional performance and disability, using both objective and subjective measures.

Loss of postural control affects essentially all patients suffering from acute vertigo and has a substantial impact on day-to-day functioning. It is assessed relatively easily through a number of widely used balance and functional tests, such as the Tandem Romberg, standing on foam or single-leg stance tests for static conditions or the tandem gait, timed "up and go" or ten meter walking tests for dynamic conditions.

Other outcome measures target the interaction between inner ear and ocular sensory input. Nystagmography measures the velocity and direction of involuntary eye movements (nystagmus) triggered by vestibular imbalance and the head-impulse test measures to which extent the reflex is disturbed that triggers eye movement as a response to a movement of the head. Further, there are clinician or patient reported clinical outcomes that subjectively capture the illusion of movement, the duration of the illusion, motion intolerance, neurovegetative signs, and instability. Examples include the Dizziness Handicap Inventory (DHI) questionnaire, the Vestibular Rehabilitation Benefits Questionnaire (VRBQ) or the European Evaluation of Vertigo (EEV) questionnaire.

In 2018, we conducted a second Phase 1 clinical trial with AM-125 in 72 healthy volunteers. The randomized double blind placebo controlled trial demonstrated superior bioavailability over a range of four intranasal betahistine doses compared to oral betahistine, with plasma exposure being five to 29 times higher (unadjusted for dose; p-value between 0.056 and $p < 0.0001$). Further, it showed that the treatment was well tolerated when administered three times daily for three days. Single doses were escalated up to 60 mg, and repeated doses up to 40 mg. For the latter, the maximum tolerated dose based on local tolerability was determined at 40 mg.

On June 13, 2022, we announced top-line data from our Phase 2 TRAVERS trial with AM-125 (intranasal betahistine) in acute vertigo (acute vestibular syndrome, AVS). The randomized, double-blind, placebo-controlled TRAVERS trial enrolled at more than ten study sites across Europe a total of 124 patients who suffered from acute vertigo following surgery for the removal of a tumor. Patients were randomized to receive either AM-125 at up to 20 mg or a placebo three times daily for four weeks, which was followed by a two-week treatment-free observation period. In addition, all trial participants followed a standardized course of vestibular rehabilitation therapy. Improvement in the “Tandem Romberg” test, which measures how long patients manage to maintain balance with their two feet aligned one after the other while they have their eyes closed, served as the primary efficacy outcome. For reference, the trial also included 16 patients who received ‘open label’ oral betahistine at 16 mg three times daily (the approved dose in most countries worldwide).

The TRAVERS trial demonstrated good tolerability of AM-125. Further, administration of AM-125 resulted in a dose- and time-dependent improvement in balance and signs and symptoms of vestibular dysfunction. At treatment period end, patients treated with AM-125 20 mg on average managed to maintain balance for 12.5 seconds vs. 7.5 seconds for placebo treated patients, which is a statistically significant improvement ($p=0.0242$; least square means in repeated-measure ANCOVA model, per protocol population). This was corroborated by higher frequency of complete spontaneous nystagmus resolution (34.5 vs. 20.0% of patients).

We have discussed the regulatory requirements for AM-125 during a pre-Investigational New Drug (“IND”) meeting with the FDA and in the context of scientific advice meetings with the EMA and two European national health authorities to further define the development program. We expect to have further exchanges with regulatory agencies following conclusion of the TRAVERS trial, upon which we aim to obtain an IND. We expect to initiate a Phase 3 clinical trial with AM-125 in AVS in 2023. We believe that, if approved, AM-125 could become the first betahistine product for the treatment of AVS in the United States. We are currently evaluating the feasibility of a clinical study with AM-125 in benign paroxysmal positional vertigo, which may lead to the initiation of a Phase 2 trial in 2023. As we aim to focus on the RNA delivery business, we do not intend to fund any further clinical trial with AM-125 on our own, but rather seek to out-license or divest the program to a partner or acquirer.

In May 2018, we initiated project AM-201 to evaluate intranasal betahistine also for the prevention of antipsychotic-induced weight gain and somnolence. Betahistine is thought to counteract the effects of antipsychotics such as olanzapine and to relieve the inhibitory effect on the H1 receptor by binding to and activating the H1 receptor to normalize/reduce the food take and consequently lead to reduced weight gain and somnolence. We believe the weight-attenuating effect is intensified by betahistine’s property as antagonist at the H3 receptor.

In 2019, we initiated a Phase 1b trial in Europe to evaluate AM-201’s safety and therapeutic effects in this indication. Participants received either AM-201 (1, 2.5, 5, 10, 20 or 30 mg) or placebo in parallel with oral olanzapine (10 mg) once a day for four weeks. In May 2020, we announced that at AM-201 30 mg, the mean weight gain from baseline to the end of the treatment period was 2.8 kg compared against 3.7 kg in control subjects; the primary efficacy endpoint of mean reduction in weight gain was 0.9 kg and statistically significant ($p<0.02$; $n=81$ with pre-specified Bayesian augmented controls). As expected, intranasal delivery of betahistine allowed for substantially higher concentrations in blood plasma compared with levels previously reported for oral betahistine. In the context of our strategic repositioning, we have decided to deprioritize project AM-201 and suspended all development work.

Keyzilen® in Tinnitus

Tinnitus, frequently perceived as a ringing in the ears, is the perception of sound when no external sound is present. Similar to pain, it is an unwanted, unpleasant and thus distressing sensation. Tinnitus may result in further symptoms such as inability to concentrate, irritability, anxiety, insomnia, and clinical depression. In many cases, tinnitus significantly impairs quality of life and affects normal day-to-day activities. According to the American Tinnitus Association, approximately 16 million persons in the United States have tinnitus symptoms severe enough to seek medical attention and about two million persons cannot function on a normal day-to-day basis. In addition, tinnitus is now the number one service-connected disability for all veterans, before hearing loss. According to the website military.com, over 167,000 veterans were diagnosed with tinnitus in 2021 and over 2.5 million veterans are currently receiving disability benefits for it.

Acoustic trauma and other insults to the inner ear may trigger increased levels of extra-cellular glutamate, which in turn cause excessive activation of cochlear NMDA receptors. This process results in damage or killing of sensory cells and is thought to be responsible for abnormal spontaneous “firing” of auditory nerve fibers, which may be perceived as tinnitus. Under normal circumstances, the NMDA receptors are thought to play no role in the auditory nerve’s transmission of nerve pulses that carry sound information. In case of a trauma such as excessive sound exposure these receptors may become pathologically active, and thus tinnitus is triggered.

We have been developing Keyzilen[®], Esketamine gel for injection, for the treatment of acute inner ear tinnitus. Esketamine is a potent, small molecule non-competitive NMDA receptor antagonist. Keyzilen[®] is formulated in a biocompatible gel and delivered via intratympanic injection. It demonstrated good tolerability and positive effect on PROs associated with tinnitus in two Phase 2 clinical trials. In two Phase 3 clinical trials (TACTT2 and TACTT3), we were unable to confirm the efficacy of Keyzilen[™] as both of them did not meet their primary efficacy endpoints. We believe we have identified two principal sources for the negative outcomes from the TACTT trials: (i) the high frequency of tinnitus loudness ratings over an extended period of time and (ii) an unexpectedly high level of variability in outcomes among study sites. A survey among a number of TACTT3 participants revealed that the daily capture of tinnitus loudness and annoyance caused a number of patients to excessively focus on their tinnitus symptoms. In addition, it was observed that a non-negligible number of study participants presumably became tired of the daily ratings after some time and stopped providing actual values. With respect to variability, our analysis subsequent to the unblinding of the trial data has shown positive outcomes at numerous sites, including many of the high enrolling study centers, but inconclusive or contradictory outcomes at other sites.

In April 2019, we announced that we had completed the design of a pivotal Phase 2/3 trial for Keyzilen[®]. The trial shall, in two stages, reaffirm the compound’s efficacy in the treatment of acute tinnitus and provide confirmatory efficacy data to support a filing for marketing authorization. In September 2019, we announced that we have obtained advice on the development plan and regulatory pathway from the U.S. Food and Drug Administration (“FDA”) in the context of a Type C meeting and from the European Medicines Agency (“EMA”) in the context of a Scientific Advice procedure for Keyzilen[®]. In the context of our strategic repositioning, we aim to divest or partner the Keyzilen[®] program.

Sonsuvi[®] (AM-111) in Hearing Loss

Sonsuvi[®] is being developed for the treatment of acute sensorineural hearing loss (ASNHL), where there is damage to the sensory cells of the inner ear. ASNHL may be triggered by a variety of insults, such as exposure to excessively loud sound, infection, inflammation or certain ototoxic drugs. These insults may also result in tinnitus. According to an article by Alexander and Harris published in *Otology & Neurotology* in 2013, the average annual incidence of sudden deafness is 66,954 new cases among the U.S. insured population. There are no currently approved treatments for this patient population.

Sonsuvi[®] contains a synthetic D-form peptide (Brimapitide or D-JNKI-1) that protects sensorineural structures in the inner ear from stress-induced damage. Sonsuvi[®] has been granted orphan drug status by both EMA and FDA and has been granted fast track designation by the FDA for the treatment of sudden sensorineural hearing loss.

We have been developing Sonsuvi[®] for acute inner ear hearing loss. In our Phase 2 clinical trial, AM-111 showed good tolerability. Furthermore, in patients with severe to profound ASNHL, we observed a clinically relevant improvement in hearing threshold, speech discrimination and a higher rate of complete tinnitus remission compared with placebo. In November 2017, we announced that the HEALOS Phase 3 clinical trial that investigated Sonsuvi[®] in the treatment of acute inner ear hearing loss did not meet the primary efficacy endpoint. However, a post-hoc analysis of the subpopulation with profound acute hearing loss (PTA \geq 90 dB at baseline in accordance with a commonly used classification of hearing loss severity) revealed a clinically meaningful and nominally significant improvement in the Sonsuvi[®] 0.4 mg/mL treatment group.

Based on the HEALOS results, we submitted the design of a new pivotal trial with AM-111 0.4 mg/mL in patients suffering from acute profound hearing loss to the EMA and subsequently also to the FDA for review. Through a Protocol Assistance procedure the EMA endorsed the proposed trial design, choice of efficacy and safety endpoints, as well as the statistical methodology. In a Type C meeting with written responses, the proposed choice of primary and secondary efficacy endpoints, the safety endpoints, as well as the planned sample size and statistical methodology were also endorsed by the FDA. In the context of our strategic repositioning, we aim to divest or partner the Sonsuvi[®] program.

Competition

We face or may face competition from different sources with respect to our commercial product Bentrio[®] and our drug product candidates AM-125, AM-401, AM-411 and our other pipeline products or any product candidates that we may seek to develop or commercialize in the future. Any product candidates that we successfully develop and commercialize will compete with existing therapies, even if they are not licensed specifically for use in our target therapeutic indications or if they lack clear proof of efficacy.

Possible competitors may be biotechnology, pharmaceutical and medical device companies as well as academic institutions, government agencies and private and public research institutions, which may in the future develop products to treat KRAS driven cancer, rheumatoid arthritis, vertigo, allergic rhinitis or viral infections. Bentrio[®] and any drug product candidates that we successfully develop and commercialize will compete with new therapies that may become available in the future. We believe that the key competitive factors affecting the success of our product candidates, if approved, are likely to be efficacy, safety, convenience, price, tolerability and the availability of reimbursement from government and other third-party payors.

Allergic rhinitis and upper respiratory airway infections

We believe that our main competitors for Bentrio[®] are Marinomed Biotech AG or Marinomed, SaNOtize Research and Development Corp. or Sanotize, Nasaleze Ltd. or Nasaleze, Nasus Pharma Ltd. or Nasus Pharma, and larger companies such as Haleon, Bayer, Sanofi, Procter & Gamble, Reckitt Benckiser, and Johnson & Johnson. These companies already market a variety of OTC drug or drug-free products for the management of allergic rhinitis and/or protection against certain viruses. E.g. Nasaleze and Nasus Pharma market nasal sprays based on hydroxypropylmethylcellulose (HPMC) powder which serves to establish a barrier on the nasal mucosa. Marinomed is marketing through various licensees a nasal spray based on carrageenan, a sulfated polymer from red seaweed, for protection against certain respiratory viral infections. Sanotize is marketing a nasal spray drug that uses nitric oxide to kill viruses. Other marketed products include nasal sprays, tablets or lozenges (e.g. based on corticosteroids or antihistamines). Some of the aforementioned drugs or medicinal products are marketed globally, whereas others are marketed only regionally. We believe that we will be able to differentiate AM-301 against competing products based on its triple mode of action devoid of any active substance, its extended nasal residence time, and utility in protecting against deleterious effects of both airborne allergens and viruses.

Vestibular Disorders

There are a number of product candidates in clinical development by third parties that aim to prevent or treat vertigo. Based on publicly available information, we have identified the following product candidates that are currently in clinical development:

- Otolith Labs is developing a noninvasive vestibular system masking device for treatment of vestibulogenic vertigo. The headband device applies localized mechanical stimulation to the vestibular system through calibrated vibrations. It is primarily intended for use by chronic vertigo patients. The company is planning to conduct a clinical trial and obtain FDA clearance.

- Sound Pharma has a product candidate (SPI-1005, ebselen), that mimics and prompts production of the enzyme glutathione peroxidase and is designed for oral administration. In June 2019 Sound Pharmaceuticals announced top-line results from a Phase 2 clinical trial with SP-1005 with Meniere's disease. The company reported a significant improvement in hearing; however, no information was provided with regard to any potential treatment effects on vertigo. In 2020, Sound Pharmaceuticals announced its intention to move SPI-1005 into Phase 3 development; however the status of such trial is unclear.

The aforementioned developments have the potential to compete with AM-125. Likewise, AM-125, if approved, will compete with products that are licensed or used off-label for the treatment of vestibular disorders and Meniere's disease, including steroids, diuretics, anti-emetics or anti-nausea medications as well as oral betahistine, the standard of care for treatment of Meniere's disease and vestibular vertigo in many countries outside the United States. Although we expect that AM-125 will offer benefits over oral betahistine due to the ability to bypass the strong first-pass metabolism associated with oral intake and provide for a higher bioavailability and avoid gastric side effects, it may take time to change prescribing and usage patterns in favor of the newer product.

KRAS driven cancers

There are several companies developing treatments for KRAS driven cancers. Amgen obtained an accelerated approval by the FDA for the KRAS G12C small molecule inhibitor sotorasib as second-line treatment in NSCLC with G12C mutated KRAS (that is a glycine-to-cysteine substitution at codon 12 of KRAS). G12C mutations are also the targets for small molecule inhibitors under development by Mirati Therapeutics (adagrasib), Novartis (IDQ443), Genentech (GDC-6036), Eli Lilly (LY3537982), and Boehringer Ingelheim (BI 1823911) with target indications in NSCLC, colorectal cancer (CRC), pancreatic cancer and other solid tumors carrying the KRAS G12C mutation. Merck and Moderna are in early stage clinical development with a patient-specific mRNA-based vaccine encoding KRAS neoantigens (mRNA-5671). Revolution Medicines has several small molecule inhibitors under development, which target G12C (RMC-6291), G12D (RMC-9805), G13C (RMC-8839) or all RAS cancer mutations (RAS^{Multi} (On)). There are also programs using RNAi such as NBF-006 by Nitto Denko, which seeks to inhibit the expression of glutathione-S-transferase P and uses lipid nanoparticles for delivery, or siG12D LODER by Silenseed Ltd., which releases siRNA targeting the KRAS G12D mutation from in implanted biodegradable bio polymeric matrix.

The aforementioned developments have the potential to compete with AM-401. In addition, there exist various treatment paradigms for key targets such as NSCLC, CRC and pancreatic cancers, including resection, chemotherapy, treatment with biologics and combinations thereof, and various lines of therapy. The relative positioning within current or future lines of therapy and thus the most relevant competition to AM-401 are uncertain at this point of development.

Rheumatoid arthritis

The market for RA therapeutics is highly competitive and currently dominated by several large pharma companies. They are marketing primarily biologics targeting TNF- α , e.g. adalimumab (Abbvie), infliximab (Johnson & Johnson), or etanercept (Amgen), or other targets such as B cells (rituximab, Roche), T cells, (abatacept, BMS), or IL-6 (tocilizumab, Genentech). As the patent and other market access protection has lapsed for several of these biologics, biosimilars have been developed and introduced to the market by competitors. A biosimilar is a biologic that is highly similar to and has no clinically meaningful differences from an existing approved biologic. Further, large companies are marketing various small molecule JAK inhibitors such as upadacitinib (AbbVie), tofacitinib (Pfizer) or baricitinib (Lilly). In addition, there are various older drugs on the market, such as glucocorticoids, non-steroidal anti-inflammatory drugs (NSAIDs) or disease modifying antirheumatic drugs (DMARDs), including methotrexate, hydroxychloroquine and sulfasalazine.

RNA delivery technologies

There are several companies offering commercial- or developmental-stage technologies for delivering RNA payloads to hepatic or extrahepatic cells. These include Acuitas Therapeutics Inc., Dicerna Pharmaceuticals, Inc., Genevant Sciences Corp., Entrada Therapeutics Inc., Sirnaomics Ltd., Ovensa Inc., or Feldan Bio Inc. Although we consider that our OligoPhore™ / SemaPhore™ platform offers unique advantages over current delivery approaches such as lipid nanoparticles, GalNAc or vector conjugates through the ability to use of systemic administration, delivery to extrahepatic tissues, efficient cellular uptake and high levels of endosomal release, it may take time to raise awareness and interest among potential customers within the biopharmaceutical industry, resulting in its successful adoption.

Acute inner ear tinnitus

There are a number of products in pre-clinical research and clinical development by third parties to treat tinnitus in the broader sense. Most of them are aiming to provide symptomatic relief (without treating the underlying cause) and targeting chronic rather than acute tinnitus. Examples include TRT or tinnitus maskers as well as more recent approaches like transcranial magnetic stimulation, vagus nerve stimulation, or customized sound therapy.

Acute inner ear hearing loss

There are a number of product candidates in pre-clinical research and clinical development by third parties that aim to prevent or treat acute inner ear hearing loss. Based on publicly available information, we have identified the following drug product candidates that are currently in clinical development:

- Sound Pharma has a product candidate (SPI-1005, ebselen), that mimics and prompts production of the enzyme glutathione peroxidase and is designed for oral administration. In a Phase 2 clinical trial SP-1005 was tested for the prevention of noise-induced hearing loss in young adults. The study showed a reduction in the temporary hearing threshold that in one dose was better by 2.75 dB than in the placebo group. In July 2022 Sound Pharma announced the enrollment of the first patient into a Phase 3 trial in hearing loss and tinnitus in Meniere's Disease patients.
- Frequency Therapeutics is developing FX-322, a small molecule for the regeneration cochlear hair cells through activation of progenitor cells already present in the cochlea. In March 2021 the company reported that four dose regimens of FX-322 did not do better than placebo in a Phase 2 trial. The company is currently conducting another Phase 2 trial with FX-322 and expects to obtain results in the first quarter of 2023. In 2022, Frequency Therapeutics initiated a Phase 1 trial with FX-345 for acquired sensorineural hearing loss.

We believe that Sonsuvi[®] is the only product candidate administered after an incidence of acute hearing loss that so far has demonstrated in a randomized, placebo controlled clinical trial a clinically relevant and significant improvement in hearing. To the extent that other drug developers demonstrate clinical efficacy for their product candidates in the prevention and treatment of permanent hearing loss from ASNHL, our competitive position may be weakened, and the market exclusivity under the orphan drug designation may be circumvented.

Intellectual Property

Patents

We seek regulatory approval for our products in disease areas with high unmet medical need, great market potential and where we have a proprietary position through patents covering various aspects of our products, e.g., composition, dosage, formulation, and use, etc. Our success depends on an intellectual property portfolio that supports our future revenue streams as well as erects barriers to our competitors. For example, we have broad disclosures in our patent applications and can pursue patent claims directed to our own leading product candidates as well as claims directed to certain potentially competing products. In addition, our earlier filed patent applications are prior art to others including certain of our competitors who filed their patent applications later than ours. We are maintaining and building our patent portfolio through: filing new patent applications; prosecuting existing applications and licensing and acquiring new patents and patent applications.

Despite these measures, any of our intellectual property and proprietary rights could be challenged, invalidated, circumvented, infringed or misappropriated, or such intellectual property and proprietary rights may not be sufficient to permit us to take advantage of current market trends or otherwise to provide competitive advantages.

As of December 31, 2022, we owned ten issued U.S. patents and five pending U.S. patent applications along with foreign counterparts of particular patents and applications in various jurisdictions. We co-own four of our issued U.S. patents, along with their foreign counterparts, pursuant to the terms of our co-ownership and exploitation agreement.

With respect to our issued patents in the United States, we may be entitled to obtain a patent term extension to extend the patent expiration date. For example, in the United States, we can apply for a patent term extension of up to five years for one of the patents covering a product once the product is approved by the FDA. The exact duration of the extension depends on the time we spend in clinical trials as well as getting a new drug application approval from the FDA.

Bentrio[®]

In September 2021, we converted four provisional U.S. patent filings into a non-provisional U.S. patent application relating to the formulation and use of Bentrio[®]. The pending patent application's claims are directed to aqueous compositions comprising a mucoadhesive polymer and clay particles. U.S. patent prosecution is ongoing. In addition, we filed an international Patent Cooperation Treat (PCT) patent application.

Intranasal Betahistine

We have acquired from Otifex a patent application on the composition and use of intranasal betahistine, which issued on October 29, 2019, as a U.S. patent. Related patents have issued or been allowed in more than 40 other countries to date. These patents are expected to expire in 2038. Further, we acquired in 2018 two U.S. patents relating to the use of betahistine for the prevention and treatment of olanzapine induced weight gain, and we acquired in 2019 two U.S. patents relating to the use of betahistine for the treatment of attention deficit hyperactivity disorder and atypical depression.

AM-401 and AM-411

We are the exclusive licensee under our agreement with Washington University of a portfolio of patents and patent applications that relate to peptide based polyplexes for RNA delivery. The portfolio includes two issued US patents along with their foreign counterparts in various jurisdictions that cover the composition of matter or method of use of the peptide based polyplexes. These licensed patents and patent applications relating to AM-401, AM-411 and potential further applications of the technology are expected to expire between 2034 and 2037, prior to any patent term extensions to which we may be entitled under applicable laws.

Keyzilen[®]

We are the owner or co-owner of patents and patent applications relating to Ketamine or its use in inner ear tinnitus. In particular, we have an agreement entitled "Co-Ownership/Exploitation Agreement" with INSERM with respect to its Ketamine patent portfolio. We have rights to four issued U.S. patents and corresponding patents and applications in other jurisdictions covering formulation and use of Ketamine. Our issued patents relating to Keyzilen[®] are expected to expire between 2024 and 2028.

Sonsuvi[®]

We are the exclusive licensee under our agreement with Xigen of a portfolio of patents that relate, among other things, to JNK ligand peptides or their use in hearing loss. This portfolio includes seven issued U.S. patents along with their foreign counterparts in various jurisdictions that cover the composition of matter or method of use of the JNK ligand peptides. These licensed patents and patent applications relating to Sonsuvi[®] are expected to expire between 2023 and 2027, prior to any patent term extensions to which we may be entitled under applicable laws.

Proprietary Rights

In addition to patent protection, we intend to use other means to protect our proprietary rights. We may pursue marketing exclusivity periods that are available under regulatory provisions in certain countries, including the US, Europe and Japan. For example, if we are the first to obtain market approval of a small molecule product in the United States, we would expect to receive five years of market exclusivity in the U.S.

Furthermore, orphan drug exclusivity has been or may be sought where available. Such exclusivity has a term of seven years in the United States and ten years in Europe. We have obtained orphan drug designation for *Sonsuvi*[®] for the treatment of AS NHL in the United States and Europe. Orphan drug protection has been or may be sought where available if such protection also grants seven years of market exclusivity. In addition, we have acquired a U.S. orphan drug designation for betahistine for the treatment of obesity associated with Prader-Willi syndrome.

We have obtained U.S. trademark registrations for Altamira, Auris Medical Cochlear Therapies (and Design), *Keyzilen*[®] and *Sonsuvi*[®]. Further, we have obtained several U.S. trademark registrations for betahistine.

In addition, we rely upon unpatented trade secrets, know-how, and continuing technological innovation to develop and maintain our competitive position. We seek to protect our ownership of know-how and trade secrets through an active program of legal mechanism including assignments, confidentiality agreements, material transfer agreements, research collaborations and licenses.

Collaboration and License Agreements

Washington University

On December 11, 2020, we entered into an Exclusive License Agreement with Washington University, which Exclusive License Agreement was subsequently amended and restated in June 2021 (as so amended and restated, the "Agreement"), with effect as of December 11, 2020. Pursuant to the Agreement, WU granted us an exclusive, worldwide, royalty-bearing license (with the right to sublicense) during the term of the Agreement under certain patent rights owned or controlled by WU to research, develop, make, have made, sell, offer for sale, use and import pharmaceutical products covered under such patent rights for all fields of use. Such licensed products may include "silencing RNA" (siRNAs) pharmaceutical preparations formulated in combination with our proprietary delivery technologies. In consideration for such worldwide, exclusive license, we will be obligated to pay WU: annual license maintenance fees in the low five figures through first commercial sale; pre-clinical and clinical regulatory milestones; sales milestones; and a low single digit royalty based on annual net sales of licensed products worldwide for at least the applicable patent term or period of marketing exclusivity, whichever is longer, but in no case less than a minimum royalty term of 12 years; and a percentage share (in the double digits) of sublicensing revenues received by the Company in connection with licensed products. Such regulatory and sales milestones may total up to an aggregate of \$4,375,000. In the event the Company fails to meet certain regulatory diligence milestones, WU will have the right to terminate the license.

In particular, we are required to use commercially reasonable efforts to meet the following development milestones: a) to file an IND (or regulatory equivalent in foreign jurisdiction) June 30, 2023, b) to complete a Phase 1 clinical trial 3.5 years after achieving the first milestone, and c) to complete a Phase 2 clinical trial four years after achieving the second milestone. We may elect to extend each of these milestones once by a period of 12 months, and second time by a period of an additional 12 months, by paying WU a nonrefundable fee in the amount of \$50,000 for the first extension and \$100,000 for the second extension.

INSERM

In 2006, we entered into a co-ownership/exploitation agreement with the INSERM, a publicly funded government science and technology agency in France. Pursuant to the terms of the agreement, we were granted the exclusive right to exploit any products derived from patents that resulted from our joint research program with INSERM that was conducted in 2003 to 2005 and led to the development of *Keyzilen*[®]. Pursuant to the terms of the co-ownership/exploitation agreement, we are given the exclusive right to exploit the patents issuing from the filed patent applications for all claimed applications, including the treatment of tinnitus, in order to develop, promote, manufacture, cause to be manufactured, use, sell and distribute any products, processes or services deriving from such patents, including *Keyzilen*[®], in any country in which these patent applications have been filed during the term of the agreement. INSERM is entitled to use the inventions covered by the patents and applications for its own research purposes, free of charge, but may not generate any direct or indirect profits from such use. Pursuant to the terms of our agreement with INSERM, we are required to finance research and development work towards achieving certain specified marketing authorizations, and to use best efforts in so far as commercially and financially feasible to develop, market, and obtain regulatory authorization for products covered by such patents.

As consideration for the exclusive rights granted to us under the agreement, we have agreed to pay INSERM a two tiered low single digit royalty (where the higher rate is due on any net sales above a certain threshold) on the net sales of any product covered by the patents (including the use of Keyzilen[®] in the treatment of tinnitus triggered by cochlear glutamate excitotoxicity) earned in each country in which these patent applications have been filed during the term of the agreement. We have also agreed to pay INSERM a low double digit fee on any sums of any nature (except royalties and certain costs) collected by us in respect of the granting of licenses to third parties.

The agreement will remain in force until the last of the patents covered by the agreement expires or becomes invalid. The patent covered by the agreement with the latest expiration date expires in 2028. The agreement will be terminated if we cease operations or are liquidated, may be terminated by either party in case of non-performance by the other party and may be terminated by INSERM in the absence of sales of a product deriving from the patents for a period from when it first marketed and if such a product is not marketed for a period from the date when marketing authorization is obtained.

Xigen

In October 2003, we entered into a collaboration and license agreement with Xigen, pursuant to which Xigen granted us an exclusive worldwide license to use specified compounds to develop, manufacture and commercialize “pharmaceutical products as well as drug delivery devices and formulations for local administration of therapeutic substances to the inner ear for the treatment of ear disorders” (the Area). We also have a right of first refusal to license certain additional compounds developed by Xigen which may be used for the Area, specifically any cell permeable inhibitors to effectively block certain signal pathways in apoptotic processes.

Under this agreement, we made an upfront payment to Xigen of CHF 200,000 and we are obligated to make development milestone payments on an indication-by-indication basis of up to CHF 1.5 million and regulatory milestone payments on a product-by-product basis of up to CHF 2.5 million, subject to a mid-twenties percentage reduction for smaller indications, e.g., those qualifying for orphan drug status. To date, we have paid CHF 1.325 million to Xigen under the agreement. We will be required to pay Xigen a mid-single digit percentage royalty on net sales of each licensed product that uses a compound licensed under the agreement, which royalty for a given indication shall be partially offset by milestone payments we have paid for such indication, until the later of 10 years after the first commercial sale of any licensed product using such licensed compound in any country, and the first expiration of a patent owned by or exclusively licensed to Xigen that covers the use of such licensed compound in any country, subject to our obligation to enter into good faith negotiations with Xigen, upon expiration of the relevant patent on a licensed compound, about the conditions of our further use of such licensed compound.

Under this agreement we and Xigen grant each other access to non-clinical or clinical data relating to the compounds licensed under the agreement free of charge for use in the other party’s proprietary development programs. We have also agreed, upon Xigen’s request, to offer third parties access to our non-clinical and clinical data relating to compounds licensed under the agreement for use outside the field of our license, provided that with respect to third party access, we are compensated for a portion of our costs in obtaining such data.

Xigen is responsible for maintaining the patents licensed to us under our agreement. New patents filed by us for specific inner ear indications or formulations of compounds licensed under our agreement are jointly owned by us and Xigen, and exclusively licensed to us in our field. We retain all know-how and other results from our development of compounds licensed under the agreement.

Our agreement with Xigen remains in effect until terminated. In August 2019 Xigen was acquired by Kuste Biopharma SAS, or Kuste, a French company. In February 2021, we were notified by Kuste of its decision to terminate the agreement effective May 10, 2021 due to the alleged lack of any development work since August 2018. We consider that the purported termination is without effect and that the agreement continues to be in full force and effect in accordance with its terms. We have retained legal counsel and intend to defend our interests, as appropriate and necessary. In any case, we do not view the agreement with Xigen as material to the Company and its operations.

Manufacturing

We currently rely on and expect to continue to rely on third parties for the manufacture of Bentrio® and the supply of raw materials and to manufacture supplies for clinical trials of our drug product candidates, including AM-125, AM-401, AM-411 and any other drug product candidate. For the foreseeable future, we expect to continue to rely on such third parties for the manufacture of any of our products or drug product candidates on a clinical or commercial scale. Reliance on third-party providers may expose us to more risk than if we were to manufacture product candidates ourselves. The facilities used by our contract manufacturers to manufacture our product candidates must be approved by the FDA or other regulatory authorities pursuant to inspections that will be conducted after we submit our NDA or comparable marketing application to the FDA or other regulatory authority. We do not have control over a supplier's or manufacturer's compliance with these laws, regulations and applicable cGMP standards and other laws and regulations, such as those related to environmental health and safety matters. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or others, they will not be able to secure and/or maintain regulatory approval for their manufacturing facilities. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our products or drug product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain regulatory approval for or market our products or drug product candidates, if approved. Any failure to achieve and maintain compliance with these laws, regulations and standards could subject us to the risk that we may have to suspend the manufacturing of our products or drug product candidates or that obtained approvals could be revoked, which would adversely affect our business and reputation. Furthermore, third-party providers may breach agreements they have with us because of factors beyond our control. They may also terminate or refuse to renew their agreements because of their own financial difficulties or business priorities, potentially at a time that is costly or otherwise inconvenient for us. If we were unable to find adequate replacement or another acceptable solution in time, our clinical trials could be delayed or our commercial activities could be harmed.

In addition, the fact that we are dependent on our suppliers and other third parties for the manufacture, storage and distribution of our products and drug product candidates means that we are subject to the risk that the products may have manufacturing defects that we have limited ability to prevent or control. The sale of products containing such defects could result in recalls or regulatory enforcement action that could adversely affect our business, financial condition and results of operations.

Growth in the costs and expenses of components or raw materials may also adversely influence our business, financial condition and results of operations. Supply sources could be interrupted from time to time and, if interrupted, it is not assured that supplies could be resumed (whether in part or in whole) within a reasonable timeframe and at an acceptable cost or at all.

Commercialization Strategy

Given our current stage of product development, we currently have only a limited commercialization infrastructure. For the commercialization of Bentrio®, which we initiated in July 2021 in selected European countries, we rely primarily on distributors. In addition, we have concluded distribution and marketing agreements with companies such as Wellesta, Nuance and Avernus for Asian and Middle Eastern countries and continue to seek further commercial partners, in particular for Europe and North America. However, we may be unable to secure appropriate or timely support and as a result experience a delay of the product launch or product sales below our expectations. Further, as an "OTC" product, the purchase of Bentrio® by consumers is unlikely to be eligible for reimbursement by health insurance plans and will therefore have to be purchased out of their own pocket. We expect the lack of reimbursement coverage to reduce the pool of potential buyers.

If any of our drug product candidates is granted marketing approval, we intend to focus our initial commercial efforts in the United States and select European markets, which we believe represent the largest market opportunities for us. In those markets, we expect our commercial operations to include our own specialty sales force that we will specifically develop to target ear, nose and throat (ENT) doctors and specialists in neurotology and neurology, both in hospitals and in private practice. For these and other markets, we expect to seek partnerships that would maximize our products' commercial potential.

Government Regulation

Product Approval Process

The clinical testing, manufacturing, labeling, storage, distribution, record keeping, advertising, promotion, import, export and marketing, among other things, of our product candidates are subject to extensive regulation by governmental authorities in the United States and other countries. The FDA, under the Federal Food, Drug, and Cosmetic Act, regulates pharmaceutical products and medical devices in the United States.

The steps required before a drug may be approved for marketing in the United States generally include:

- the completion of pre-clinical laboratory tests and animal tests conducted under GLP regulations;
- the submission to the FDA of an IND application for human clinical testing, which must become effective before human clinical trials commence;
- the performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the product candidate for each proposed indication and conducted in accordance with cGCP;
- the submission to the FDA of an NDA;
- the FDA's acceptance of the NDA;
- satisfactory completion of an FDA inspection of the manufacturing facilities at which the product is made to assess compliance with cGMPs; and
- the FDA's review and approval of an NDA prior to any commercial marketing or sale of the drug in the United States.

The testing and approval process requires substantial time, effort and financial resources, and the receipt and timing of any approval is uncertain.

Pre-clinical studies include laboratory evaluations of the product candidate, as well as animal studies to assess the potential safety and efficacy of the product candidate. The results of the pre-clinical studies, together with manufacturing information and analytical data, are submitted to the FDA as part of the IND, which must become effective before clinical trials may be commenced. The IND will become effective automatically 30 days after receipt by the FDA, unless the FDA raises concerns or questions about the conduct of the trials as outlined in the IND prior to that time. In this case, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials can proceed.

Clinical trials involve the administration of the drug product candidates to healthy volunteers or patients with the disease to be treated under the supervision of a qualified principal investigator. Clinical trials are conducted under protocols detailing, among other things, the objectives of the study, the parameters to be used in monitoring safety, and the efficacy criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. Further, each clinical trial must be reviewed and approved by an independent Institutional Review Board, or IRB, either centrally or individually at each institution at which the clinical trial will be conducted. The IRB will consider, among other things, ethical factors, the safety of human subjects and the possible liability of the institution. There are also requirements governing the reporting of ongoing clinical trials and clinical trial results to public registries. The FDA, the IRB or the clinical trial sponsor may suspend or terminate clinical trials at any time on various grounds, including a finding that the subjects or patients are being exposed to an unacceptable health risk. Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board or committee. This group provides authorization for whether or not a trial may move forward at designated check points based on access to certain data from the study. We may also suspend or terminate a clinical trial based on evolving business objectives and/or competitive climate.

Clinical trials are typically conducted in three sequential phases prior to approval, but the phases may overlap. These phases generally include the following:

- *Phase 1.* Phase 1 clinical trials represent the initial introduction of a product candidate into human subjects, frequently healthy volunteers. In Phase 1, the product candidate is usually tested for safety, including adverse effects, dosage tolerance, absorption, distribution, metabolism, excretion and pharmacodynamics.
- *Phase 2.* Phase 2 clinical trials usually involve studies in a limited patient population to (1) evaluate the efficacy of the product candidate for specific indications, (2) determine dosage tolerance and optimal dosage and (3) identify possible adverse effects and safety risks.
- *Phase 3.* If a product candidate is found to be potentially effective and to have an acceptable safety profile in Phase 2 studies, the clinical trial program will be expanded to Phase 3 clinical trials to further demonstrate clinical efficacy, optimal dosage and safety within an expanded patient population at geographically dispersed clinical study sites.

Phase 4 clinical trials are conducted after approval to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of drugs approved under accelerated approval regulations, or when otherwise requested by the FDA in the form of post-market requirements or commitments. Failure to promptly conduct any required Phase 4 clinical trials could result in withdrawal of approval.

The results of pre-clinical studies and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information on the manufacture, composition and quality of the product, are submitted to the FDA in the form of an NDA requesting approval to market the product. The NDA must be accompanied by a significant user fee payment. The FDA has substantial discretion in the approval process and may refuse to accept any application or decide that the data is insufficient for approval and require additional pre-clinical, clinical or other studies.

In addition, under the Pediatric Research Equity Act, or PREA, an NDA or supplement to an NDA must contain data to assess the safety and effectiveness of the drug for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers. Unless otherwise required by regulation, PREA does not apply to any drug for an indication for which orphan designation has been granted. However, if only one indication for a product has orphan designation, a pediatric assessment may still be required for any applications to market that same product for the non-orphan indication(s).

Once the NDA submission has been submitted, the FDA has 60 days after submission of the NDA to conduct an initial review to determine whether it is sufficient to accept for filing. Under the Prescription Drug User Fee Act, the FDA sets a goal date by which it plans to complete its review. The current goal date is 10 months from the date of submission of the NDA application. The review process is often extended by FDA requests for additional information or clarification. Before approving an NDA, the FDA will inspect the facilities at which the product is manufactured and will not approve the product unless the manufacturing facility complies with cGMPs and may also inspect clinical trial sites for integrity of data supporting safety and efficacy. The FDA may also convene an advisory committee of external experts to provide input on certain review issues relating to risk, benefit and interpretation of clinical trial data. The FDA is not bound by the recommendations of an advisory committee, but generally follows such recommendations in making its decisions. The FDA may delay approval of an NDA if applicable regulatory criteria are not satisfied and/or the FDA requires additional testing or information. The FDA may require post-marketing testing and surveillance to monitor safety or efficacy of a product.

After the FDA evaluates the NDA and conducts inspections of manufacturing facilities where the drug product and/or its API will be produced, it may issue an approval letter or a Complete Response Letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications. A Complete Response Letter indicates that the review cycle of the application is complete and the application is not ready for approval. A Complete Response Letter may require additional clinical data and/or an additional pivotal Phase 3 clinical trial(s), and/or other significant, expensive and time-consuming requirements related to clinical trials, pre-clinical studies or manufacturing. Even if such additional information is submitted, the FDA may ultimately decide that the NDA does not satisfy the criteria for approval. The FDA could also approve the NDA with a Risk Evaluation and Mitigation Strategy, or REMS, plan to mitigate risks, which could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling, development of adequate controls and specifications, or a commitment to conduct one or more post-market studies or clinical trials. Such post-market testing may include Phase 4 clinical trials and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

Device Approval Process

Unless an exemption applies, any medical device that is to be marketed in the U.S. must first receive from the FDA either 510(k) clearance, by filing a 510(k) premarket notification, or PMA approval, after submitting a PMA. Alternatively, the device may be cleared through the de novo classification process by the FDA. AM-301 has been considered a Class II device by FDA and cleared under the 510(k) pathway for the product's intended use of promoting alleviation of mild allergic symptoms triggered by the inhalation of various airborne allergens.

To obtain 510(k) clearance, a company must submit a premarket notification demonstrating substantial equivalence between the proposed device and a legally marketed "predicate" device, which is defined as a legally marketed device, that (i) was legally marketed prior to May 28, 1976, for which the FDA has not yet called for submission of a PMA application; (ii) has been reclassified from Class III to Class II or Class I; (iii) has been cleared through the 510(k) premarket notification process; or (iv) has been previously determined to be exempt from the 510(k) process. Substantial equivalence means that the proposed device has the same intended use and the same technological characteristics as the predicate device, or, if the new device has different technological characteristics, that the device is as safe and effective as the predicate device and does not raise different questions of safety and effectiveness.

Bentrio[®] was developed for use in the reduction of the intranasal infectious viral load following inspiration of airborne viruses such as SARS-CoV-2. The FDA did not accept that this proposed intended use could proceed on the medical device pathway. The rationale provided is that it makes a drug-like claim that would require a drug approval. Feedback received from the FDA in 2021, prior to the Bentrio 510(k) clearance, suggested that the regulatory pathway for this intended use and interpretation of mechanism of action would result in the product being regulated as a drug rather than a medical device. That interpretation by the FDA is arguable, especially in light of the subsequent 510(k) clearance for allergens. For future indications beyond the currently cleared Bentrio intended use, additional work and engagement with the FDA is needed to finalize the device vs drug regulation pathway and associated nonclinical and clinical evidence requirements. If the device pathway is deemed appropriate, we may have to submit a de novo request to the FDA since there may be no valid 510(k) predicate device available for this intended use. Under the de novo pathway, we would have to prove that AM-301 does not present substantial risk to the patient rather than just demonstrating substantial equivalence with the safety of the relevant predicate device(s), which may require additional testing. The review by the FDA in the de novo process is longer than the review process for 510(k) submissions and requires higher fees. Any device that has been classified through the de novo process may be marketed and used as predicate for future 510(k) submissions.

Many foreign countries in which we intend to market Bentrio[®] have regulatory bodies and restrictions similar to those of the FDA. International sales are subject to foreign government regulation, the requirements of which vary substantially from country to country. The time required to obtain approval by a foreign country may be longer or shorter than that required for FDA clearance and the requirements may differ.

In particular, Bentrio[®] may be marketed in the European Union (EU) subject to compliance with the Medical Devices Directive 93/92/EEC (MDD), pursuant to which a medical device may be placed on the market within the EU only if it conforms to certain "essential requirements" and bears the CE Mark. The most fundamental and essential requirement is that a medical device must be designed and manufactured in such a way that it will not compromise the clinical condition or safety of patients, or the safety and health of users and others. In addition, the device must achieve the essential performance(s) intended by the manufacturer and be designed, manufactured and packaged in a suitable manner. In May 2017, the EU adopted a new Medical Devices Regulation (EU) 2017/745 (MDR), which repealed and replaced the MDD with effect from May 26, 2021. The MDR clearly envisages, among other things, stricter controls of medical devices, including strengthening of the conformity assessment procedures, increased expectations with respect to clinical data for devices and pre-market regulatory review of high-risk devices. The MDR also envisages greater control over notified bodies and their standards, increased transparency, more robust device vigilance requirements and clarification of the rules for clinical investigations. Under transitional provisions, medical devices with notified body certificates issued under the MDD prior to May 26, 2021 may continue to be placed on the market for the remaining validity of the certificate, until May 27, 2024 at the latest. On February 16, 2023, the Council of the European Union and the European Parliament approved extension of the MDR transition periods; for Class I medical devices (such as Bentrio[®]) an extension to May 26, 2028 was approved. After the expiry of any applicable transitional period, only devices that have been CE marked under the MDR may be placed on the market in the EU.

Manufacturers must demonstrate that their devices conform to the relevant essential requirements through a conformity assessment procedure. The nature of the assessment depends upon the classification of the device. The classification rules are mainly based on three criteria: the length of time the device is in contact with the body, the degree of invasiveness and the extent to which the device affects the anatomy. Conformity assessment procedures for all but the lowest risk classification of device involve a notified body. Notified bodies are often private entities and are authorized or licensed to perform such assessments by government authorities. Manufacturers usually have some flexibility to select a notified body for the conformity assessment procedures for a particular class of device and to reflect their circumstances, e.g., the likelihood that the manufacturer will make frequent modifications to its products. Conformity assessment procedures require an assessment of available clinical evidence, literature data for the product and post-market experience in respect of similar products already marketed. Notified bodies also may review the manufacturer's quality systems. If satisfied that the product conforms to the relevant essential requirements, the notified body issues a certificate of conformity, which the manufacturer uses as a basis for its own declaration of conformity and application of the CE Mark. Application of the CE Mark allows the general commercializing of a product in the EU. The product can also be subjected to local registration requirements depending on the country. We maintain CE Marking on all of our products that require such markings as well as local registrations as required.

Pharmaceutical Coverage, Pricing and Reimbursement

In both domestic and foreign markets, our sales of any approved drug products will depend in part on the availability of coverage and adequate reimbursement from third-party payors. Third-party payors include government authorities, managed care providers, private health insurers and other organizations. Patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use our products, if approved, unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of our products. Sales of our products will therefore depend substantially, both domestically and abroad, on the extent to which the costs of our products will be paid by third-party payors. These third-party payors are increasingly focused on containing healthcare costs by challenging the price and examining the cost-effectiveness of medical products and services.

In addition, significant uncertainty exists as to the coverage and reimbursement status of newly approved healthcare product candidates. The market for our product candidates for which we may receive regulatory approval will depend significantly on access to third-party payors' drug formularies, or lists of medications for which third-party payors provide coverage and reimbursement. The industry competition to be included in such formularies often leads to downward pricing pressures on pharmaceutical companies. Also, third-party payors may refuse to include a particular branded drug in their formularies or otherwise restrict patient access to a branded drug when a less costly generic equivalent or another alternative is available. Furthermore, third-party payor reimbursement to providers for our product candidates may be subject to a bundled payment that also includes the procedure administering our products. To the extent there is no separate payment for our product candidates, there may be further uncertainty as to the adequacy of reimbursement amounts.

Because each third-party payor individually approves coverage and reimbursement levels, obtaining coverage and adequate reimbursement is a time-consuming, costly and sometimes unpredictable process. We may be required to provide scientific and clinical support for the use of any product to each third-party payor separately with no assurance that approval would be obtained, and we may need to conduct expensive pharmacoeconomic studies in order to demonstrate the cost-effectiveness of our products. This process could delay the market acceptance of any product and could have a negative effect on our future revenues and operating results. We cannot be certain that our product candidates will be considered cost-effective. Because coverage and reimbursement determinations are made on a payor-by-payor basis, obtaining acceptable coverage and reimbursement from one payor does not guarantee the Company will obtain similar acceptable coverage or reimbursement from another payor. If we are unable to obtain coverage of, and adequate reimbursement and payment levels for, our product candidates from third-party payors, physicians may limit how much or under what circumstances they will prescribe or administer them and patients may decline to purchase them. This in turn could affect our ability to successfully commercialize our products and impact our profitability, results of operations, financial condition and future success.

Furthermore, in many foreign countries, particularly the countries of the European Union, the pricing of prescription drugs is subject to government control. In some non-U.S. jurisdictions, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, the European Union provides options for its member states to restrict the range of medicinal products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. A member state may approve a specific price for the medicinal product or it may instead adopt a system of direct or indirect controls on the profitability of the Company placing the medicinal product on the market. We may face competition for our product candidates from lower-priced products in foreign countries that have placed price controls on pharmaceutical products. In addition, there may be importation of foreign products that compete with our own products, which could negatively impact our profitability.

Healthcare Reform

In the United States and foreign jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes to the healthcare system that could affect our future results of operations as we begin to directly commercialize our products.

In particular, there have been and continue to be a number of initiatives at the U.S. federal and state level that seek to reduce healthcare costs. Initiatives to reduce the federal deficit and to reform healthcare delivery are increasing cost-containment efforts. We anticipate that Congress, state legislatures and the private sector will continue to review and assess alternative benefits, controls on healthcare spending through limitations on the growth of private health insurance premiums and Medicare and Medicaid spending, the creation of large insurance purchasing groups, price controls on pharmaceuticals and other fundamental changes to the healthcare delivery system. Any proposed or actual changes could limit or eliminate our spending on development projects and affect our ultimate profitability.

In the future, there may continue to be additional proposals relating to the reform of the United States healthcare system, some of which could further limit the prices we are able to charge for our products candidates, or the amounts of reimbursement available for our product candidates. If future legislation were to impose direct governmental price controls and access restrictions, it could have a significant adverse impact on our business. Managed care organizations, as well as Medicaid and other government agencies, continue to seek price discounts. Some states have implemented, and other states are considering, price controls or patient access constraints under the Medicaid program, and some states are considering price-control regimes that would apply to broader segments of their populations that are not Medicaid-eligible. Due to the volatility in the current economic and market dynamics, we are unable to predict the impact of any unforeseen or unknown legislative, regulatory, payor or policy actions, which may include cost containment and healthcare reform measures. Such policy actions could have a material adverse impact on our profitability.

The federal Drug Supply Chain Security Act imposes obligations on manufacturers of pharmaceutical products, among others, related to product tracking and tracing. Manufacturers will be required to provide certain information regarding the drug product to individuals and entities to which product ownership is transferred, label drug product with a product identifier, and keep certain records regarding the drug product. Further, under this new legislation, manufacturers will have drug product investigation, quarantine, disposition, and notification responsibilities related to counterfeit, diverted, stolen, and intentionally adulterated products, as well as products that are the subject of fraudulent transactions or which are otherwise unfit for distribution such that they would be reasonably likely to result in serious health consequences or death.

Other Regulatory Requirements

Maintaining substantial compliance with appropriate federal, state and local statutes and regulations requires the expenditure of substantial time and financial resources. Drug and device manufacturers are required to register their establishments with the FDA and certain state agencies, and after approval, the FDA and these state agencies conduct periodic unannounced inspections to ensure continued compliance with ongoing regulatory requirements, including cGMPs and QSR. In addition, after approval, some types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further FDA review and approval.

The FDA may require post-approval testing and surveillance programs to monitor safety and the effectiveness of approved products that have been commercialized. Any drug or device products manufactured or distributed by us pursuant to FDA approvals are subject to continuing regulation by the FDA, including:

- record-keeping requirements;
- reporting of adverse experiences with the drug or device;
- providing the FDA with updated safety and efficacy information;
- reporting on drug advertisements and promotional labeling;
- drug sampling and distribution requirements; and
- complying with electronic record and signature requirements.

In addition, the FDA strictly regulates labeling, advertising, promotion and other types of information on products that are placed on the market. There are numerous regulations and policies that govern various means for disseminating information to health-care professionals as well as consumers, including to industry sponsored scientific and educational activities, information provided to the media and information provided over the Internet. Drugs may be promoted only for the approved indications and in accordance with the provisions of the approved label.

The FDA has very broad enforcement authority and the failure to comply with applicable regulatory requirements can result in administrative or judicial sanctions being imposed on us or on the manufacturers and distributors of our approved products, including warning letters, refusals of government contracts, clinical holds, civil penalties, injunctions, restitution and disgorgement of profits, recall or seizure of products, total or partial suspension of production or distribution, withdrawal of approvals, refusal to approve pending applications, and criminal prosecution resulting in fines and incarceration. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability. In addition, even after regulatory approval is obtained, later discovery of previously unknown problems with a product may result in restrictions on the product or even complete withdrawal of the product from the market.

Other Healthcare Laws

Because of our current and future arrangements with healthcare professionals, principal investigators, consultants, customers and third-party payors, we will also be subject to healthcare regulation and enforcement by the federal government and the states and foreign governments in which we will conduct our business, including our clinical research, proposed sales, marketing and educational programs. Failure to comply with these laws, where applicable, can result in the imposition of significant civil penalties, criminal penalties, or both. The U.S. laws that may affect our ability to operate, among others, include: the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, which governs the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; certain state laws governing the privacy and security of health information in certain circumstances, some of which are more stringent than HIPAA and many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts; the federal healthcare programs' Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs such as the Medicare and Medicaid programs; federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent; federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters; the Physician Payments Sunshine Act, which requires manufacturers of drugs, devices, biologics, and medical supplies to report annually to the U.S. Department of Health and Human Services information related to payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, and ownership and investment interests held by physicians and their immediate family members; and state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers.

In addition, many states have similar laws and regulations, such as anti-kickback and false claims laws that may be broader in scope and may apply regardless of payor, in addition to items and services reimbursed under Medicaid and other state programs. Additionally, to the extent that our products are sold in a foreign country, we may be subject to similar foreign laws.

Organizational Structure

The registrant corporation, Altamira Therapeutics Ltd., had seven wholly-owned subsidiaries as of December 31, 2022, which are listed in Exhibit 21.1. We primarily operate our business out of our operating subsidiary Auris Medical AG.

Property, plants and equipment

Our registered office is in Hamilton, Bermuda. We also lease approximately 4,700 square feet of office space in Basel, Switzerland. This property serves as the corporate headquarters of our principal operating subsidiary.

MANAGEMENT

Directors and senior management

Our directors have been elected for a one-year term and, accordingly, the term will expire at the time of our 2023 annual general meeting.

The following table presents information about our executive officers and directors.

Name	Position	Age	Initial Year of Appointment
Executive Officers			
Thomas Meyer	Chairman, Director and Chief Executive Officer	55	2003
Marcel Gremaud	Chief Financial Officer	65	2021
Covadonga Pañeda	Chief Operating Officer (RNA)	49	2022
Non-Executive Directors			
Armando Anido	Director	65	2016
Mats Blom	Director	58	2017
Alain Munoz	Director	73	2018
Margrit Schwarz	Director	59	2021

Unless otherwise indicated, the current business addresses for our executive officers and directors is Altamira Therapeutics Ltd., Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda.

Executive Officers

Thomas Meyer, Founder, Chairman of the Board of Directors and Chief Executive Officer: Mr. Meyer founded Auris Medical in April 2003 and has served as Chairman and CEO since that time. Prior to founding us, he was the Chief Executive Officer of Disetronic Group, a leading Swiss supplier of precision infusion and injection systems. He worked for Disetronic in various functions starting in 1988, becoming member of the Board of Directors in 1996, Deputy Chief Executive Officer in 1999 and Chief Executive Officer in early 2000. Prior to joining Disetronic, he advised several Swiss companies in strategy, marketing and corporate finance. He has been the Chairman of the Board of Directors of PharmaTrail Ltd. since 2020. He holds a Ph.D. (Dr.rer.pol.) in business administration from the University of Fribourg, Switzerland.

Marcel Gremaud, Chief Financial Officer: Mr. Gremaud, CPA, has been Altamira Therapeutics' Chief Financial Officer since November 2021. In 2001 he founded Gremaud GmbH, an audit and accounting company and has been supporting in this function companies in financial consolidation and accounting in accordance with IFRS or Swiss GAAP FER, as owner and CEO of Gremaud GmbH. Mr. Gremaud has more than 30 years' experience in controlling and accounting in international pharma companies and start-ups.

Covadonga Pañeda, Chief Operating Officer (RNA) (from April 2022): Ms. Pañeda, Ph.D., has over 15 years of experience in drug development. From 2011 to 2018, she served as R&D Manager at Sylentis S.A., a clinical stage RNAi biopharma company, served as R&D Senior Project Leader from 2018 to 2019 at Exeltis (Insudpharma), a company focused on the development of branded pharmaceuticals, served as Director of Development from 2019 to 2020 at Canaan Research and Investment, a venture capital fund focused on biotechnology companies, and most recently, from 2020 to 2022, she served as Director of Development at Limm Therapeutics, a neuroimmune biopharma company. Dr. Pañeda obtained a Ph.D. in Biochemistry and Molecular Biology at the Faculty of Medicine at Universidad Autónoma, Madrid, Spain, and spent several years as a Post-doc at the Scripps Research Institute, La Jolla, CA. In April 2022 Ms. Pañeda joined us as Chief Development Officer and was promoted to Chief Operating Officer effective January 1, 2023.

Non-Executive Directors

Armando Anido, Director, Chairman of the Compensation Committee: Mr. Anido has been a member of our Board of Directors since April 2016. Mr. Anido has more than 30 years of executive, operational and commercial leadership experience in the biopharmaceutical industry. He has served as Chairman and Chief Executive Officer of Zynerba Pharmaceuticals, Inc., since October 2014. Prior to Zynerba, Mr. Anido served as Chief Executive Officer and Director of NuPathe, Inc., and Auxilium Pharmaceuticals, Inc. Prior to Auxilium, Mr. Anido held commercial leadership roles at MedImmune, Glaxo Wellcome and Lederle Labs. He is currently a member of the Board of Directors of SCYNEXIS, Inc. (SCYX), and he was a member of the Board of Directors of Aviragen Therapeutics, Inc. until it merged with Vaxart Inc. (VXRT) and Adolor Corporation until it was sold to Cubist Pharmaceuticals. Mr. Anido earned a BS in Pharmacy and an MBA from West Virginia University.

Mats Blom, Director: Mr. Blom has been a member of our Board of Directors since April 2017. Mr. Blom is Chief Financial Officer (CFO) of NorthSea Therapeutics B.V., a biotechnology company focused on oral, structurally engineered lipid therapeutics. Prior to joining NorthSea, he served as CFO of Modus Therapeutics A/B, a biotechnology company developing therapeutics to restore healthy blood flow for patients with debilitating diseases, Zealand Pharma A/B, a biotechnology company focused on the discovery, design and development of innovative peptide-based medicines, and Swedish Orphan International, an orphan drug company acquired by BioVitrum in 2009. In addition, Mr. Blom has extensive managerial experience and has held CFO positions at Active Biotech AB and Anoto Group AB. Previously, he served as a management consultant at Gemini Consulting and Ernst & Young. He is currently a member of the Board of Directors of Hansa Biopharma AB (HNSA), Egetis Therapeutics AB (EGTX) and Pephexia Therapeutics ApS. Mats Blom holds a BA in Business Administration and Economics from the University of Lund and an MBA from IESE University of Navarra, Barcelona.

Alain Munoz, Director: Mr. Munoz, MD, has been a member of our Board of Directors since March 2018 and previously served on our Board of Directors between 2007 and 2015. Mr. Munoz is an entrepreneur and independent management consultant in the pharmaceutical and biotechnology industry. From 1990 to 2000, Dr. Munoz worked with the Fournier Group, as Research and Development Director and then Senior Vice President of the Pharmaceutical Division. He joined Fournier from Sanofi Research, where he started as Director in the cardiovascular and anti-thrombotic products department and then as Vice President international development. Dr. Munoz is qualified in cardiology and anesthesiology from the University Hospital of Montpellier, France where he was head of the clinical cardiology department. He has been a member of the Scientific Committee of the French drug agency. He serves on the Board of Zealand Pharma A/S (ZEAL.CO) and Amryt Pharma Plc (AMYT.L). He is Chairman of the Board of Acticor Biotech (ALACT.PA).

Margrit Schwarz, Director: Ms. Schwarz has been a member of our Board of Directors since July 2021. She currently serves as Chief Business Officer of HeparGeniX, a clinical-stage biotechnology company in the liver regeneration space. Prior executive positions include Chief Operating Officer of Draupnir Bio, and Chief Scientific Officer and Head of R&D at Genevant Sciences, where she was responsible for developing a portfolio of RNAi and mRNA drug candidates in the liver and rare disease space. Dr. Schwarz has also served as VP & Global Head External Innovation at Roche, VP & Therapeutic Area Head Cardioresenal at Boehringer Ingelheim, and Director Research at Amgen. She has led preclinical R&D and IND-enabling phases for multiple development candidates, including the anti-PCSK9 therapeutic antibody Repatha, launched in 2015. She is an Entrepreneur-in-Residence at Novo Seeds and has been a member of the Board of Directors of the KERN Conference since 2009. She holds a PhD in biochemistry from the University of Cologne, Germany, and an MBA from Columbia University, NY.

Other Key Service Providers

Samuel A. Wickline, Chief Scientific Adviser (Chief Scientific Officer from June 2021 to December 2022): Dr. Wickline, MD, is the founder of Trasir Therapeutics, Inc., which we acquired in 2021 and formed the basis for our activities in RNA therapeutics. Before joining Altamira Therapeutics, he was the Director of the USF Health Heart Institute, Associate Dean and Chair in Cardiovascular Medicine, Professor of Cardiovascular Sciences, Molecular Physiology and Pharmacology, and Medical Engineering at the University of South Florida (USF). Previously, he was Professor of Medicine, Physics, Biomedical Engineering, and Cell Biology and Physiology at Washington University, St. Louis. Dr. Wickline stepped down as CSO by the end of 2022 and serves on a part-time consulting basis as Chief Scientific Adviser since January 1, 2023.

Compensation

For the year ended December 31, 2022, the aggregate compensation accrued or paid to the members of our board of directors and our executive officers for services in all capacities was CHF 1,104,848 (2021: CHF 946,449).

For the year ended December 31, 2022, the amount set aside or accrued by us to provide pension, retirement or similar benefits to members of our board of directors or executive officers amounted to a total of CHF 49,050 (2021: CHF 29,467).

Compensation awarded to the Board of Directors in 2022

The total compensation of the members of the board of directors in 2022 is outlined below:

In CHF	Cash Compensation	Social Contributions	Share Options(2)	Total
Thomas Meyer, PhD, Chairman(1)	-	-	-	-
Armando Anido, MBA	41,713	-	12,793	54,506
Mats Blom, MBA	41,634	-	12,793	54,427
Alain Munoz, MD	41,634	-	12,793	54,427
Margrit Schwarz, PhD	41,923	-	8,250	50,173
Total	166,904	-	46,629	213,533

- (1) Disclosed under “Compensation Awarded to Our Executive Officers” below. The Chief Executive Officer does not receive any additional compensation for the exercise of the office of the Chairman.
- (2) In 2022, 2,069 options were granted to each eligible member of the Board of Directors, with an exercise price of USD 17.20 per common share and an expiration date of May 19, 2030. The fair value calculation of the options was based on the Black-Scholes option pricing model. Assumptions were made regarding inputs such as volatility and the risk-free rate in order to determine the fair value of the options.

Compensation Awarded to our Executive Officers in 2022

The total compensation and the highest individual compensation to our executive officers in 2022 are outlined below:

in CHF	Fixed Cash Compensation	Variable Compensation (1)	Social contributions and fringe benefits	Share Options(2)	Total
Thomas Meyer, PhD, Chief Executive Officer(3)	366,000	54,900	82,026	134,831	637,757
Executive Officers Total(4)	909,469	122,616	130,490	175,351	1,337,926

- (1) The variable compensation is paid in shares of the company.
- (2) 2022 option grants, exercise prices of \$20.78 and \$6.353, expiration date April 30, 2030 and October 31, 2030, respectively. The fair value calculation of the options was based on the Black-Scholes option pricing model. Assumptions were made regarding inputs such as volatility and the risk-free rate in order to determine the fair value of the options.
- (3) Highest paid executive.
- (4) On December 31, 2022, we had four executive officers.

Employment Agreements

We have entered into employment and/or consulting agreements with our executive officers Thomas Meyer, Covadonga Pañeda and Marcel Gremaud. We were also party to two additional employment agreements which terminated effective December 31, 2022. The employment and/or consulting agreements provide for the compensation that the executive officers are entitled to receive, including certain equity grants, and the employment agreement of Mr. Meyer contains a termination notice period of six months. The Company will have title to the intellectual property rights developed in connection with the executive officer’s employment, if any.

None of our directors has entered into service agreements with the Company. However, we may in the future enter into employment or services agreements with such individuals, the terms of which may provide for, among other things, cash or equity-based compensation and benefits.

Equity Incentive Plans

Equity Incentive Plan

In August 2014, as amended and restated in June 2019, we established the Equity Incentive Plan, or the EIP, with the purpose of motivating and rewarding those employees and other individuals who are expected to contribute significantly to our success, and advancing the interests of our shareholders by enhancing our ability to attract, retain and motivate individuals. Since January 15, 2021, the maximum number of shares available for issuance under the EIP is 75,000 common shares. The option exercise price for options under the EIP is determined by the compensation committee at the time of grant but shall not be less than the par value of a common share on the grant date. As of December 31, 2022, no common shares are available for award under the EIP.

Plan administration. The EIP is administered by our compensation committee. Approval of the committee is required for all grants of awards under the EIP. The committee may delegate to one or more officers the authority to grant options and share appreciation rights, and the committee may delegate to another committee (which may consist of solely one director) the authority to grant all types of awards.

Eligibility. Any director, employee, consultant or any other individual who provides services to us or any of our affiliates is eligible to be selected to receive an award under the EIP.

Awards. Awards include options, share appreciation rights, restricted shares, restricted share units, performance awards and other share-based awards.

Vesting period. The committee determines the time or times at which an option becomes vested and exercisable, provided that the minimum vesting period is 12 months. The committee may specify in an award agreement that an “in-the-money” option be automatically exercised on its expiration date. For restricted shares and restricted share units, the award agreement will specify the vesting schedule and, with respect to restricted share units, the delivery schedule.

Accelerated vesting. Subject to any additional vesting conditions that may be specified in an individual award agreement, the EIP provides that upon a change of control of the Company (as defined in the EIP) the committee may cause options and share appreciation rights to be cancelled in consideration of full acceleration of the award or a substitute award with equal intrinsic value (as defined in the EIP). It also provides that the committee may decide, or include in any award agreement, the circumstances in which, and the extent to which, an award may be exercised, settled, vested, paid or forfeited in the event of a participant’s termination of service prior to exercise or settlement of an award.

Amendment. Our board of directors has the authority to amend the EIP subject, in certain circumstances, to required shareholder approval or the consent of an affected participant.

Indemnification

Section 98 of the Companies Act provides generally that a Bermuda company may indemnify its directors, officers and auditors against any liability which by virtue of any rule of law would otherwise be imposed on them in respect of any negligence, default, breach of duty or breach of trust, except in cases where such liability arises from fraud or dishonesty of which such director, officer or auditor may be guilty in relation to the company. Section 98 further provides that a Bermuda company may indemnify its directors, officers and auditors against any liability incurred by them in defending any proceedings, whether civil or criminal, in which judgment is awarded in their favor or in which they are acquitted or granted relief by the Supreme Court of Bermuda pursuant to section 281 of the Companies Act.

Our Bye-laws provide that we shall indemnify our officers and directors in respect of their actions and omissions, except in respect of their fraud or dishonesty. Our Bye-laws provide that the shareholders waive all claims or rights of action that they might have, individually or in right of the company, against any of the company's directors or officers for any act or failure to act in the performance of such director's or officer's duties, except in respect of any fraud or dishonesty of such director or officer. Section 98A of the Companies Act permits us to purchase and maintain insurance for the benefit of any officer or director in respect of any loss or liability attaching to him in respect of any negligence, default, breach of duty or breach of trust, whether or not we may otherwise indemnify such officer or director. We have purchased and maintain a directors' and officers' liability policy for such a purpose.

We have entered into indemnification agreements with each of the members of our board of directors and executive officers, and may enter into such agreements with additional directors and executive officers. The indemnification agreements require us to indemnify our directors and executive officers to the fullest extent permitted by law against liabilities that may arise by reason of their service to the Company, and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified.

Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the Company, the Company has been advised that, in the opinion of the Securities and Exchange Commission, such indemnification is against public policy as expressed in the Securities Act of 1933, as amended, and is, therefore, unenforceable.

Board Practices

Board Composition and Election of Directors

Our board of directors is currently composed of five members. Each director is elected for a one-year term.

Our Bye-laws provide that directors may be elected at either the annual general meeting or a special general meeting. Unless shareholders determine otherwise, under our Bye-laws directors hold office until the next annual general meeting or until their successors are elected or appointed or their office is otherwise vacated.

We are a foreign private issuer. As a result, in accordance with the Nasdaq stock exchange listing requirements, we comply with home country governance requirements and certain exemptions thereunder rather than the Nasdaq stock exchange corporate governance requirements.

Committees of the Board of Directors

Audit Committee

The audit committee, which consists of Mats Blom, Alain Munoz and Margrit Schwarz, assists our board of directors in overseeing our accounting and financial reporting processes and the audits of our financial statements. In addition, the audit committee is directly responsible for the appointment, compensation, retention and oversight of the work of our independent registered public accounting firm. Mr. Blom serves as chairman of the committee. The audit committee consists exclusively of members of our board of directors who are financially literate, and Mr. Blom is considered an "audit committee financial expert" as defined by the SEC. Our board of directors has determined that Mr. Blom, Mr. Munoz and Ms. Schwarz satisfy the "independence" requirements set forth in Rule 10A-3 under the Exchange Act.

The audit committee is governed by a charter that complies with Nasdaq rules. The audit committee is responsible for, among other things:

- the appointment, compensation, retention and oversight of any auditor or accounting firm engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services;
- pre-approving the audit services and non-audit services to be provided by our independent auditor before the auditor is engaged to render such services;
- reviewing and discussing with the independent auditor its responsibilities under generally accepted auditing standards, the planned scope and timing of the independent auditor's annual audit plan(s) and significant findings from the audit;
- obtaining and reviewing a report from the independent auditor describing all relationships between the independent auditor and the Company consistent with the applicable PCAOB requirements regarding the independent auditor's communications with the audit committee concerning independence;
- confirming and evaluating the rotation of the audit partners on the audit engagement team as required by law;
- reviewing with management and the independent auditor, in separate meetings whenever the Audit Committee deems appropriate, any analyses or other written communications prepared by the Management and/or the independent auditor setting forth significant financial reporting issues and judgments made in connection with the preparation of the financial statements, including analyses of the effects of alternative IFRS methods on the financial statements; and other critical accounting policies and practices of the Company;
- reviewing, in conjunction with the Chief Executive Officer and Chief Financial Officer of the Company, the Company's disclosure controls and procedures and internal control over financial reporting;
- establishing procedures for the receipt, retention and treatment of complaints received by the Company regarding accounting, internal accounting controls or auditing matters, and the confidential, anonymous submission by employees of the Company of concerns regarding questionable accounting or auditing matters;
- approving or ratifying any related person transaction (as defined in our related person transaction policy) in accordance with our related person transaction policy.

The audit committee meets at least four times per year.

Compensation Committee

The compensation committee, which consists of Armando Anido and Alain Munoz, assists our board of directors in overseeing our cash compensation and equity award recommendations for our executive officers along with the rationale for such recommendations, as well as summary information regarding the aggregate compensation provided to our directors and executive officers. While Bermuda law does not require that we adopt a compensation committee, we have established a compensation committee in accordance with our bye-laws. As a result, our practice varies from the requirements of Nasdaq Listing Rule 5605(d), which sets forth certain requirements as to the responsibilities, composition and independence of compensation committees.

Employees

As of December 31, 2022, we had 18 employees (16.3 full time equivalents, FTEs). The breakdown by cost centers is as follows: Research & Development: 12.6 FTEs, General & Administration: 1.6 FTEs, Sales & Marketing: 1.1 FTEs, Cost of Goods Sold: 1.0 FTEs. 15.3 FTEs were located in Switzerland and 1 FTE in the U.S. None of our employees is subject to a collective bargaining agreement or represented by a trade or labor union. We consider our relations with our employees to be good.

MAJOR SHAREHOLDERS

The following table presents information relating to the beneficial ownership of our common shares as of March 7, 2023 by:

- each person, or group of affiliated persons, known by us to own beneficially 5% or more of our outstanding common shares;
- each of our executive officers and directors; and
- all executive officers and directors as a group.

The number of common shares beneficially owned by each entity, person, executive officer or director is determined in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any common shares over which the individual has sole or shared voting power or investment power as well as any common shares that the individual has the right to acquire within 60 days of March 7, 2023 through the exercise of any option, warrant or other right. Except as otherwise indicated, and subject to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all common shares held by that person.

Common shares that a person has the right to acquire within 60 days of March 7, 2023 are deemed outstanding for purposes of computing the percentage ownership of the person holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person, except with respect to the percentage ownership of all executive officers and directors as a group. Unless otherwise indicated below, the address for each beneficial owner is Altamira Therapeutics Ltd., Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda.

The percentage of common shares beneficially owned is based on 2,387,987 common shares issued and outstanding as of March 7, 2023. Each common share confers the right on the holder to cast one vote at a general meeting of shareholders and no shareholder has different voting rights.

Shareholder	Shares Beneficially Owned	
	Number	Percent
5% Shareholders		
-	-	-
Executive Officers and Directors		
Thomas Meyer, PhD (1)	84,106	3.5%
Armando Anido, MBA (2)	3,500	*
Mats Blom, MBA (3)	3,500	*
Alain Munoz, MD (4)	3,494	*
Margrit Schwarz	-	*
Marcel Gremaud, CPA	-	*
Covadonga Pañeda	-	*
All current directors and executive officers as a group (7 persons)	94,600	4.0%

* Indicates beneficial ownership of less than 1% of the total outstanding common shares.

(1) Consists of 51,999 common shares, warrants to purchase 18,377 common shares and options to purchase 13,730 common shares under the EIP.

(2) Consists of options to purchase common shares under the EIP.

(3) Consists of options to purchase common shares under the EIP.

(4) Consists of 3 common shares owned by Alain Munoz and options to purchase 3,491 common shares under the EIP.

Holders

As of March 7, 2023, we had six shareholders of record of our common shares.

Significant Changes in Ownership by Major Shareholders

None

RELATED PARTY TRANSACTIONS

Related Person Transaction Policy

Prior to our initial public offering, we entered into a new related person transaction policy under which any such transaction must be approved or ratified by the audit committee or the board of directors.

Indemnification Agreements

We have entered into indemnification agreements with our directors and executive officers, and may enter into such agreements with additional directors and executive officers. The indemnification agreements require us to indemnify our directors and executive officers to the fullest extent permitted by law against liabilities that may arise by reason of their service to the Company, and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. Insofar as indemnification for liabilities arising under the Securities Act of 1933, as amended, may be permitted to directors, officers and controlling persons of the Company, the Company has been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act of 1933, as amended, and is, therefore, unenforceable.

Employment Agreements

Certain of our executive officers have entered into employment agreements with the Company, certain of which provide for notice of termination periods and include restrictive covenants. None of our directors have entered into service agreements with the Company.

Mandate Agreement

Ante Treuhand AG (“Ante Treuhand”) provided the services of Elmar Schärli, Chief Financial Officer to the Company until November 18, 2021. Elmar Schärli was an employee of Ante Treuhand and was not paid directly by the Company. Fees paid to Ante Treuhand for such services were CHF 231,770 in 2021 compared to CHF 173,030 in 2020. Fees paid to Ante Treuhand for other services provided during the year ended December 31, 2021 were CHF 18,020 compared to CHF 3,025 in 2020.

Gremaud GmbH has provided the Chief Financial Officer for the Company since November 18, 2021. The Chief Financial Officer is an employee of Gremaud GmbH and is not paid directly by the Company. Fees paid to Gremaud GmbH for CFO services were CHF 195,988 for 2022 compared to CHF 14,720 in 2021. Fees paid to Gremaud GmbH for other services provided during the year ended December 31, 2022 were CHF 0 compared to CHF 161,596 in 2021.

Loan Agreements

On September 9, 2022, the Company entered into a loan agreement with FiveT Investment Management Ltd., Dominik Lysek and Thomas Meyer, the Company’s CEO (the “Lenders”), pursuant to which the Lenders have agreed to loan to the Company an aggregate of CHF 600,000.00 (the “September 2022 Loan Agreement”), which Loan bears interest at the rate of 5% per annum and matures as of March 31, 2023. The Company issued to the Lenders warrants (the “Warrants”) to purchase an aggregate 41,666 common shares. The Warrants became exercisable immediately at an exercise price of CHF 7.20 per share, may be exercised up to five years from the date of issuance and may be exercised on a cashless basis in certain circumstances specified therein. Mr. Meyer lent CHF 200,000 of the total principal amount.

Mr. Meyer’s spouse provided one of the Company’s subsidiaries with a short-term loan of CHF 100,000 on December 8, 2022, as amended, due and payable on March 31, 2023, bearing interest at the rate of 5% per annum.

DESCRIPTION OF SHARE CAPITAL AND BYE-LAWS

General

We are an exempted company incorporated under the laws of Bermuda. We began our current operations in 2003 as a corporation organized in accordance with Swiss law and domiciled in Switzerland under the name Auris Medical AG, and our name was changed to Auris Medical Holding AG on April 22, 2014. Following the Merger on March 13, 2018, the surviving entity was named Auris Medical Holding AG. Upon the issuance of a certificate of continuance by the Registrar of Companies in Bermuda on March 18, 2019, the Redomestication was effected and we continued in Bermuda pursuant to Section 132C of the Companies Act as a Bermuda company, subject to the Companies Act and other laws of Bermuda, with the name "Auris Medical Holding Ltd". At a Special General Meeting of Shareholders held on July 21, 2021, the Company adopted the new name "Altamira Therapeutics Ltd." Our registered office is located at Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda.

The Memorandum of Continuance provides that the objects of our business are unrestricted, and we have the capacity, rights, powers and privileges of a natural person.

Since the Redomestication, other than the 2019 and 2022 Reverse Share Splits and the increase of authorized share capital of the Company on June 30, 2020, reduction of issued share capital on July 29, 2020, reduction of authorized share capital on September 29, 2020 and increase of authorized share capital on September 29, 2022, and as otherwise described herein, including the change of the company name to Altamira Therapeutics Ltd. on 21 July 2021, there have been no material changes to our share capital, mergers, amalgamations or consolidations of us or any of our subsidiaries, no material changes in the mode of conducting our business, no material changes in the types of products produced or services rendered and no name changes. There have been no bankruptcy, receivership or similar proceedings with respect to us or our subsidiaries.

There have been no public takeover offers by third parties for our shares nor any public takeover offers by us for the shares of another company which have occurred during the last or current financial years.

Share Capital

Our authorized share capital consists of 25,000,000 common shares, par value CHF 0.20 per share, and 20,000,000 preference shares, par value CHF 0.02 per share, and as of March 7, 2023 there were 2,387,987 common shares issued and outstanding, excluding an assumed 890,261 common shares to be issued upon conversion of the FiveT Loan, an assumed 2,577,600 common shares issuable upon exercise of the FiveT Pre-Funded Warrants, an assumed 3,467,860 common shares issuable upon exercise of the FiveT Common Warrants, 157,730 common shares issuable upon exercise of options and 99,171 common shares issuable upon exercise of warrants, and no preference shares issued and outstanding. All the Company's issued and outstanding shares are fully paid in.

Pursuant to our Bye-laws, subject to any resolution of the shareholders to the contrary, our board of directors is authorized to issue any of our authorized but unissued shares. There are no limitations on the right of non-Bermudians or non-residents of Bermuda to hold or vote our shares.

Common Shares

Holders of common shares have no pre-emptive, redemption, conversion or sinking fund rights. Holders of common shares are entitled to one vote per share on all matters submitted to a vote of holders of common shares. Unless a different majority is required by law or by our Bye-laws, resolutions to be approved by holders of common shares require approval by a simple majority of votes cast at a general meeting at which a quorum is present.

In the event of our liquidation, dissolution or winding up, the holders of common shares are entitled to share equally and ratably in our assets, if any, remaining after the payment of all of our debts and liabilities, subject to any liquidation preference on any issued and outstanding preference shares.

Preferred Shares

Pursuant to Bermuda law and our Bye-laws, our board of directors by resolution may establish one or more series of preference shares having such number of shares, designations, dividend rates, relative voting rights, conversion or exchange rights, redemption rights, liquidation rights and other relative participation, optional or other special rights, qualifications, limitations or restrictions as may be fixed by the board without any further shareholder approval. Such rights, preferences, powers and limitations as may be established could have the effect of discouraging an attempt to obtain control of us.

Dividend Rights

Under Bermuda law a company may not declare or pay dividends if there are reasonable grounds for believing that: (i) the company is, or would after the payment be, unable to pay its liabilities as they become due; or (ii) the realizable value of its assets would thereby be less than its liabilities. Under our Bye-laws, each common share is entitled to dividends if, as and when dividends are declared by our board of directors, subject to any preferred dividend right of the holders of any preference shares.

Variation of Rights

If at any time we have more than one class of shares, the rights attaching to any class, unless otherwise provided for by the terms of issue of the relevant class, may be varied either: (i) with the consent in writing of the holders of 75% of the issued shares of that class; or (ii) with the sanction of a resolution passed by a majority of the votes cast at a general meeting of the relevant class of shareholders at which a quorum consisting of at least two or more persons holding or representing issued and outstanding shares of the relevant class is present. Our Bye-laws specify that the creation or issue of shares ranking equally with existing shares will not, unless expressly provided by the terms of issue of existing shares, vary the rights attached to existing shares. In addition, the creation or issue of preference shares ranking prior to common shares will not be deemed to vary the rights attached to common shares or, subject to the terms of any other series of preference shares, to vary the rights attached to any other series of preference shares.

Transfer of Shares

Our board of directors may in its absolute discretion and without assigning any reason refuse to register the transfer of a share that it is not fully paid. Our board of directors may also refuse to recognize an instrument of transfer of a share unless it is accompanied by the relevant share certificate and such other evidence of the transferor's right to make the transfer as our board of directors shall reasonably require. Subject to these restrictions, a holder of common shares may transfer the title to all or any of his common shares by completing a form of transfer in the form set out in our Bye-laws (or as near thereto as circumstances admit) or in such other common form as the board may accept. The instrument of transfer must be signed by the transferor and transferee, although in the case of a fully paid share our board of directors may accept the instrument signed only by the transferor.

Share Split and Reverse Share Split effected by consolidating our common shares

Our board of directors may in its absolute discretion and without further approval of shareholders divide, consolidate or sub-divide our share capital in any manner permitted by the Companies Act, including approving a reverse share split by consolidating our common shares (together with a corresponding increase in the par value thereof) in a ratio determined by the board of directors. Our Bye-laws also provide that upon an alteration or reduction of share capital where fractions of shares or some other difficulty would arise, our board of directors may deal with or resolve the same in any manner as it thinks fit.

Meeting of Shareholders

Under Bermuda law, a company is required to convene at least one general meeting of shareholders each calendar year (the "annual general meeting"). However, the members may by resolution waive this requirement, either for a specific year or period of time, or indefinitely. When the requirement has been so waived, any member may, on notice to the company, terminate the waiver, in which case an annual general meeting must be called.

Bermuda law provides that a special general meeting of shareholders may be called by the board of directors of a company and must be called upon the request of shareholders holding not less than 10% of the paid-up capital of the company carrying the right to vote at general meetings. Bermuda law also requires that shareholders be given at least five days' advance notice of a general meeting, but the accidental omission to give notice to any person does not invalidate the proceedings at a meeting. Our Bye-laws provide that the board of directors may convene an annual general meeting or a special general meeting. Under our Bye-laws, at least 14 days' notice of an annual general meeting or a special general meeting must be given to each shareholder entitled to vote at such meeting. This notice requirement is subject to the ability to hold such meetings on shorter notice if such notice is agreed: (i) in the case of an annual general meeting by all of the shareholders entitled to attend and vote at such meeting; or (ii) in the case of a special general meeting by a majority in number of the shareholders entitled to attend and vote at the meeting holding not less than 95% in nominal value of the shares entitled to vote at such meeting. The quorum required for a general meeting of shareholders is two or more persons present in person at the start of the meeting and representing in person or by proxy issued and outstanding common shares.

Access to Books and Records and Dissemination of Information

Members of the general public have a right to inspect the public documents of a company available at the office of the Registrar of Companies in Bermuda. These documents include the company's memorandum of association (or memorandum of continuance), including its objects and powers, and certain alterations to the memorandum of association (or memorandum of continuance). The shareholders have the additional right to inspect the bye-laws of the company, minutes of general meetings and the company's audited financial statements, which must be presented to the annual general meeting. The register of members of a company is also open to inspection by shareholders and by members of the general public without charge. The register of members is required to be open for inspection for not less than two hours in any business day (subject to the ability of a company to close the register of members for not more than thirty days in a year). A company is required to maintain its share register in Bermuda but may, subject to the provisions of the Companies Act, establish a branch register outside of Bermuda. A company is required to keep at its registered office a register of directors and officers that is open for inspection for not less than two hours in any business day by members of the public without charge. A company is also required to file with the Registrar of Companies in Bermuda a list of its directors to be maintained on a register, which register will be available for public inspection subject to such conditions as the Registrar may impose and on payment of such fee as may be prescribed. Bermuda law does not, however, provide a general right for shareholders to inspect or obtain copies of any other corporate records.

Election and Removal of Directors

Our Bye-laws provide that our board shall consist of three directors or such greater number as the board may determine. Our board of directors currently consists of five directors. Each director shall hold office for such term as the shareholders may determine or, in their absence of such determination, until the next annual general meeting or until their successors are elected or appointed or their office is otherwise vacated.

Any shareholder or shareholders holding or representing not less than 5% of the total voting rights wishing to propose for election as a director someone who is not an existing director or is not proposed by our board must give notice of the intention to propose the person for election. Where a director is to be elected at an annual general meeting, that notice must be given not less than 90 days nor more than 120 days before the anniversary of the last annual general meeting prior to the giving of the notice or, in the event the annual general meeting is called for a date that is not 30 days before or after such anniversary the notice must be given not later than 10 days following the earlier of the date on which notice of the annual general meeting was posted to members or the date on which public disclosure of the date of the annual general meeting was made. Where a director is to be elected at a special general meeting, that notice must be given not later than 10 days following the earlier of the date on which notice of the special general meeting was posted to members or the date on which public disclosure of the date of the special general meeting was made.

A director may be removed, with cause, by the shareholders, provided notice of the shareholders meeting convened to remove the director is given to the director. The notice must contain a statement of the intention to remove the director and must be served on the director not less than fourteen days before the meeting. The director is entitled to attend the meeting and be heard on the motion for his removal.

Proceedings of Board of Directors

Our Bye-laws provide that our business is to be managed and conducted by our board of directors. Bermuda law permits individual and corporate directors and there is no requirement in our Bye-laws or Bermuda law that directors hold any of our shares. There is also no requirement in our Bye-laws or Bermuda law that our directors must retire at a certain age.

The remuneration of our directors is determined by our board of directors, and there is no requirement that a specified number or percentage of “independent” directors must approve any such determination. Our directors may also be paid all travel, hotel and other expenses properly incurred by them in connection with our business or their duties as directors.

Provided a director discloses a direct or indirect interest in any contract or arrangement with us as required by Bermuda law, such director is entitled to vote in respect of any such contract or arrangement in which he or she is interested unless he or she is disqualified from voting by the chairman of the relevant board meeting.

Indemnification of Directors and Officers

Section 98 of the Companies Act provides generally that a Bermuda company may indemnify its directors, officers and auditors against any liability which by virtue of any rule of law would otherwise be imposed on them in respect of any negligence, default, breach of duty or breach of trust, except in cases where such liability arises from fraud or dishonesty of which such director, officer or auditor may be guilty in relation to the company. Section 98 further provides that a Bermuda company may indemnify its directors, officers and auditors against any liability incurred by them in defending any proceedings, whether civil or criminal, in which judgment is awarded in their favor or in which they are acquitted or granted relief by the Supreme Court of Bermuda pursuant to section 281 of the Companies Act.

Our Bye-laws provide that we shall indemnify our officers and directors in respect of their actions and omissions, except in respect of their fraud or dishonesty. Our Bye-laws provide that the shareholders waive all claims or rights of action that they might have, individually or in right of the company, against any of the company’s directors or officers for any act or failure to act in the performance of such director’s or officer’s duties, except in respect of any fraud or dishonesty of such director or officer. Section 98A of the Companies Act permits us to purchase and maintain insurance for the benefit of any officer or director in respect of any loss or liability attaching to him in respect of any negligence, default, breach of duty or breach of trust, whether or not we may otherwise indemnify such officer or director. We have purchased and maintain a directors’ and officers’ liability policy for such a purpose.

Amendment of Memorandum of Continuance and Bye-laws

Bermuda law provides that the memorandum of association (or memorandum of continuance) of a company may be amended by a resolution passed at a general meeting of shareholders. Our Bye-laws provide that no bye-law shall be rescinded, altered or amended, and no new bye-law shall be made, unless it shall have been approved by a resolution of our board of directors and by a resolution of our shareholders. In the case of certain bye-laws, such as the Bye-laws relating to election and removal of directors, approval of business combinations and amendment of bye-law provisions, the required resolutions must include the affirmative vote of at least 66 2/3% of our directors then in office and of at least 66 2/3% percent of the votes attaching to all shares in issue.

Under Bermuda law, the holders of an aggregate of not less than 20% in par value of a company’s issued share capital or any class thereof have the right to apply to the Supreme Court of Bermuda for an annulment of any amendment of the memorandum of association (or memorandum of continuance) adopted by shareholders at any general meeting, other than an amendment which alters or reduces a company’s share capital as provided in the Companies Act. Where such an application is made, the amendment becomes effective only to the extent that it is confirmed by the Bermuda court. An application for an annulment of an amendment of the memorandum of association (or memorandum of continuance) must be made within twenty-one days after the date on which the resolution altering the company’s memorandum of association (or memorandum of continuance) is passed and may be made on behalf of persons entitled to make the application by one or more of their number as they may appoint in writing for the purpose. No application may be made by shareholders voting in favor of the amendment.

Amalgamations, Mergers and Business Combinations

The amalgamation or merger of a Bermuda company with another company or corporation (other than certain affiliated companies) requires an amalgamation or merger agreement that is approved by the company's board of directors and by its shareholders. Unless the company's bye-laws provide otherwise, the approval of 75% of the shareholders voting at such meeting is required to approve the amalgamation or merger agreement, and the quorum for such meeting must be two persons holding or representing more than one-third of the issued shares of the company. Our Bye-laws provide that an amalgamation or a merger (other than with a wholly owned subsidiary or as described below) that has been approved by the board must only be approved by a majority of the votes cast at a general meeting of the shareholders at which the quorum shall be two or more persons present in person and representing in person or by proxy issued and outstanding common voting shares. Any amalgamation or merger or other business combination (as defined in the Bye-laws) not approved by our board of directors must be approved by the holders of not less than 66 2/3% of all votes attaching to all shares then in issue entitling the holder to attend and vote on the resolution.

Under Bermuda law, in the event of an amalgamation or merger of a Bermuda company with another company or corporation, a shareholder of the Bermuda company who did not vote in favor of the amalgamation or merger and who is not satisfied that fair value has been offered for such shareholder's shares may, within one month of notice of the shareholders meeting, apply to the Supreme Court of Bermuda to appraise the fair value of those shares.

Our Bye-laws contain provisions regarding "business combinations" with "interested shareholders". Pursuant to the Bye-laws, in addition to any other approval that may be required by applicable law, any business combination with an interested shareholder within a period of three years after the date of the transaction in which the person became an interested shareholder must be approved by our board and authorized at an annual or special general meeting by the affirmative vote of at least 66 2/3% of our issued and outstanding voting shares that are not owned by the interested shareholder, unless: (i) prior to the time that the shareholder becoming an interested shareholder, our board of directors approved either the business combination or the transaction that resulted in the shareholder becoming an interested shareholder; or (ii) upon consummation of the transaction that resulted in the shareholder becoming an interested shareholder, the interested shareholder owned at least 85% of our issued and outstanding voting shares at the time the transaction commenced. For purposes of these provisions, "business combinations" include mergers, amalgamations, consolidations and certain sales, leases, exchanges, mortgages, pledges, transfers and other dispositions of assets, issuances and transfers of shares and other transactions resulting in a financial benefit to an interested shareholder. An "interested shareholder" is a person that beneficially owns 15% or more of our issued and outstanding voting shares and any person affiliated or associated with us that owned 15% or more of our issued and outstanding voting shares at any time three years prior to the relevant time.

Compulsory Acquisition of Shares Held by Minority Holders

An acquiring party is generally able to acquire compulsorily the common shares of minority holders in the following ways:

(1) By a procedure under the Companies Act known as a "scheme of arrangement." A scheme of arrangement could be effected by obtaining the agreement of the company and of holders of its shares (or any class of shares), representing in the aggregate a majority in number and at least 75% in value of the shares or class of shares present and voting at a court ordered meeting held to consider the scheme or arrangement. The scheme of arrangement must then be sanctioned by the Bermuda Supreme Court. If a scheme of arrangement receives all necessary agreements and sanctions, upon the filing of the court order with the Registrar of Companies in Bermuda, all holders of common shares could be compelled to sell their shares under the terms of the scheme or arrangement.

(2) If the acquiring party is a company it may compulsorily acquire all the shares of the target company, by acquiring pursuant to a tender offer 90% of the shares or class of shares not already owned by, or by a nominee for, the acquiring party (the offeror), or any of its subsidiaries. If an offeror has, within four months after the making of an offer for all the shares or class of shares not owned by, or by a nominee for, the offeror, or any of its subsidiaries, obtained the approval of the holders of 90% or more of all the shares to which the offer relates, the offeror may, at any time within two months beginning with the date on which the approval was obtained, require by notice any nontendering shareholder to transfer its shares on the same terms as the original offer. In those circumstances, nontendering shareholders will be compelled to sell their shares unless the Supreme Court of Bermuda (on application made within a one-month period from the date of the offeror's notice of its intention to acquire such shares) orders otherwise.

(3) Where one or more parties holds not less than 95% of the shares or a class of shares of a company, such holder(s) may, pursuant to a notice given to the remaining shareholders or class of shareholders, acquire the shares of such remaining shareholders or class of shareholders. When this notice is given, the acquiring party is entitled and bound to acquire the shares of the remaining shareholders on the terms set out in the notice, unless a remaining shareholder, within one month of receiving such notice, applies to the Supreme Court of Bermuda for an appraisal of the value of its shares. This provision only applies where the acquiring party offers the same terms to all holders of shares whose shares are being acquired.

Anti-Takeover Provisions

Two-thirds supermajority shareholder voting requirement: Our Bye-laws provide that, except to the extent that a proposal has received the prior approval of the board, the approval of an amalgamation, merger or consolidation with or into any other person shall require the affirmative vote of not less than 66 2/3% of all votes attaching to all shares then in issue entitling the holder to attend and vote on the resolution (except for certain “business combinations” with “interested shareholders” as set forth in *Amalgamations, Mergers and Business Combinations* above).

Amendments to the Bye-laws: Our Bye-laws provide that no bye-law may be rescinded, altered or amended and no new bye-law may be made until the same has been approved by a resolution of the board and by a resolution of the shareholders. In the case of certain bye-laws, such as the Bye-laws relating to election and removal of directors, approval of business combinations and amendment of bye-law provisions, the required resolutions must include the affirmative vote of at least 66 2/3% of our directors then in office and of at least 66 2/3% percent of the votes attaching to all issued and outstanding shares.

Limitations on the election of directors: Our Bye-laws provide that a person may be proposed for election or appointment as a director at a general meeting either by the board or by one or more shareholders holding our shares which in the aggregate carry not less than 5% of the voting rights in respect of the election of directors. In addition, unless a person is proposed for election or appointment as a director by the board, when a person is proposed for appointment or election as a director, written notice of the proposal must be given to us as follows. Where a director is to be appointed or elected: (1) at an annual general meeting, such notice must be given not less than 90 days nor more than 120 days before the anniversary of the last annual general meeting prior to the giving of the notice or, in the event the annual general meeting is called for a date that is not 30 days before or after such anniversary the notice must be given not later than 10 days following the earlier of the date on which notice of the annual general meeting was posted to shareholders or the date on which public disclosure of the date of the annual general meeting was made; and (2) at a special general meeting, such notice must be given not later than 10 days following the earlier of the date on which notice of the special general meeting was posted to shareholders or the date on which public disclosure of the date of the special general meeting was made.

Shareholder Suits

Class actions and derivative actions are generally not available to shareholders under Bermuda law. The Bermuda courts, however, would ordinarily be expected to permit a shareholder to commence an action in the name of a company to remedy a wrong to the company where the act complained of is alleged to be beyond the corporate power of the company or illegal, or would result in the violation of the company’s memorandum of association (or memorandum of continuance) or bye-laws. Furthermore, consideration would be given by a Bermuda court to acts that are alleged to constitute a fraud against the minority shareholders or, for instance, where an act requires the approval of a greater percentage of the company’s shareholders than that which actually approved it.

When the affairs of a company are being conducted in a manner which is oppressive or prejudicial to the interests of some part of the shareholders, one or more shareholders may apply to the Supreme Court of Bermuda, which may make such order as it sees fit, including an order regulating the conduct of the company’s affairs in the future or ordering the purchase of the shares of any shareholders by other shareholders or by the company.

Our Bye-laws contain a provision by virtue of which our shareholders waive any claim or right of action that they have, both individually and on our behalf, against any director or officer in relation to any action or failure to take action by such director or officer, except in respect of any fraud or dishonesty of such director or officer. The SEC has advised that the operation of this provision as a waiver of the right to sue for violations of federal securities laws would likely be unenforceable in U.S. courts.

Capitalization of Profits and Reserves

Pursuant to our Bye-laws, our board of directors may (i) capitalize any part of the amount of our share premium or other reserve accounts or any amount credited to our profit and loss account or otherwise available for distribution by applying such sum in paying up unissued shares to be allotted as fully paid bonus shares pro-rata (except in connection with the conversion of shares) to the shareholders; or (ii) capitalize any sum standing to the credit of a reserve account or sums otherwise available for dividend or distribution by paying up in full, partly paid or nil paid shares of those shareholders who would have been entitled to such sums if they were distributed by way of dividend or distribution.

Exchange controls

We have received consent under the Exchange Control Act 1972 from the Bermuda Monetary Authority for the issue and transfer of the common shares to and between non-residents of Bermuda for exchange control purposes provided our shares remain listed on an appointed stock exchange, which includes the Nasdaq Capital Market. In granting such consent the Bermuda Monetary Authority accepts no responsibility for our financial soundness or the correctness of any of the statements made or opinions expressed in this prospectus.

Registrar or Transfer Agent

A register of holders of the common shares is maintained by Conyers Corporate Services (Bermuda) Limited in Bermuda, and a branch register is maintained in the United States by American Stock Transfer & Trust Company, LLC, who serves as branch registrar and transfer agent.

Untraced Shareholders

Our Bye-laws provide that our board of directors may forfeit any dividend or other monies payable in respect of any shares which remain unclaimed for six years from the date when such monies became due for payment. In addition, we are entitled to cease sending dividend warrants and checks by post or otherwise to a shareholder if such instruments have been returned undelivered to, or left uncashed by, such shareholder on at least two consecutive occasions or, following one such occasion, reasonable enquires have failed to establish the shareholder's new address. This entitlement ceases if the shareholder claims a dividend or cashes a dividend check or a warrant.

Certain Provisions of Bermuda Law

We have been designated by the Bermuda Monetary Authority as a non-resident for Bermuda exchange control purposes. This designation allows us to engage in transactions in currencies other than the Bermuda dollar, and there are no restrictions on our ability to transfer funds (other than funds denominated in Bermuda dollars) in and out of Bermuda or to pay dividends to United States residents who are holders of our common shares.

We have received consent from the Bermuda Monetary Authority for the issue and free transferability of all of our common shares to and between non-residents of Bermuda for exchange control purposes, provided our shares remain listed on an appointed stock exchange, which includes the Nasdaq Capital Market. Approvals or permissions given by the Bermuda Monetary Authority do not constitute a guarantee by the Bermuda Monetary Authority as to our performance or creditworthiness. Accordingly, in giving such consent or permissions, the Bermuda Monetary Authority shall not be liable for the financial soundness, performance or default of our business or for the correctness of any opinions or statements expressed in this prospectus. Certain issues and transfers of common shares involving persons deemed resident in Bermuda for exchange control purposes require the specific consent of the Bermuda Monetary Authority.

In accordance with Bermuda law, share certificates are only issued in the names of companies, partnerships or individuals. In the case of a shareholder acting in a special capacity (for example as a trustee), certificates may, at the request of the shareholder, record the capacity in which the shareholder is acting. Notwithstanding such recording of any special capacity, we will not be bound to investigate or see to the execution of any such trust. We will take no notice of any trust applicable to any of our shares, whether or not we have been notified of such trust.

Stock Exchange Listing

Our common shares are listed on the Nasdaq Capital Market under the symbol "CYTO."

The Depository Trust Company

Initial settlement of any common shares to be issued pursuant to this prospectus will take place through The Depository Trust Company, or DTC, in accordance with its customary settlement procedures for equity securities. Each person owning common shares held through DTC must rely on the procedures thereof and on institutions that have accounts therewith to exercise any rights of a holder of the shares.

COMPARISON OF BERMUDA LAW AND DELAWARE LAW

The Bermuda laws applicable to Bermuda companies and their shareholders differ from laws applicable to U.S. corporations and their shareholders. The following table summarizes significant differences in shareholder rights between the provisions of the Companies Act applicable to our company and the Delaware General Corporation Law applicable to companies incorporated in Delaware and their shareholders. Please note that this is only a general summary of certain provisions applicable to companies in Delaware. Certain Delaware companies may be permitted to exclude certain of the provisions summarized below in their charter documents.

DELAWARE CORPORATE LAW

Under the Delaware General Corporation Law, with certain exceptions, a merger, consolidation, sale, lease or transfer of all or substantially all of the assets of a corporation must be approved by the board of directors and a majority of the outstanding shares entitled to vote thereon. A shareholder of a Delaware corporation participating in certain major corporate transactions may, under certain circumstances, be entitled to appraisal rights pursuant to which such shareholder may receive cash in the amount of the fair value of the shares held by such shareholder (as determined by a court) in lieu of the consideration such shareholder would otherwise receive in the transaction. The Delaware General Corporation Law also provides that a parent corporation, by resolution of its board of directors, may merge with any subsidiary, of which it owns at least 90.0% of each class of capital stock without a vote by the shareholders of such subsidiary. Upon any such merger, dissenting shareholders of the subsidiary would have appraisal rights.

BERMUDA CORPORATE LAW

The amalgamation or merger of a Bermuda company with another company or corporation (other than certain affiliated companies) requires the amalgamation or merger agreement to be approved by the company's board of directors and by its shareholders. Unless the company's bye-laws provide otherwise, the approval of 75% of the shareholders voting at a general meeting is required to approve the amalgamation or merger agreement, and the quorum for such meeting must be two persons holding or representing more than one-third of the issued shares of the company. The Bye-laws provide that a merger or an amalgamation (other than with a wholly owned subsidiary or as described below) that has been approved by the board must only be approved by a majority of the votes cast at a general meeting of the shareholders at which the quorum shall be two or more persons present in person and representing in person or by proxy issued and outstanding voting shares.

The Bye-laws contain provisions regarding "business combinations" with "interested shareholders". Pursuant to our Bye-laws, in addition to any other approval that may be required by applicable law, any business combination with an interested shareholder within a period of three years after the date of the transaction in which the person became an interested shareholder must be approved by our board and authorized at an annual or special general meeting by the affirmative vote of at least 66 and 2/3rds% of our issued and outstanding voting shares that are not owned by the interested shareholder, unless: (i) prior to the time that the shareholder becoming an interested shareholder, our board of directors approved either the business combination or the transaction that resulted in the shareholder becoming an interested shareholder; or (ii) upon consummation of the transaction that resulted in the shareholder becoming an interested shareholder, the interested shareholder owned at least 85% of our issued and outstanding voting shares at the time the transaction commenced. For purposes of these provisions, "business combinations" include mergers, amalgamations, consolidations and certain sales, leases, exchanges, mortgages, pledges, transfers and other dispositions of assets, issuances and transfers of shares and other transactions resulting in a financial benefit to an interested shareholder. An "interested shareholder" is a person that beneficially owns 15% or more of our issued and outstanding voting shares and any person affiliated or associated with us that owned 15% or more of our issued and outstanding voting shares at any time three years prior to the relevant time.

Under Bermuda law, in the event of an amalgamation or merger of a Bermuda company with another company or corporation, a shareholder of the Bermuda company who did not vote in favor of the amalgamation or merger and who is not satisfied that fair value has been offered for such shareholder's shares may, within one month of notice of the shareholders meeting, apply to the Supreme Court of Bermuda to appraise the fair value of those shares. Note that each share of an amalgamating or merging companies carries the right to vote in respect of an amalgamation or merger whether or not is otherwise carries the right to vote.

DELAWARE CORPORATE LAW

Class actions and derivative actions generally are available to shareholders of a Delaware corporation for, among other things, breach of fiduciary duty, corporate waste and actions not taken in accordance with applicable law. In such actions, the court has discretion to permit the winning party to recover attorneys' fees incurred in connection with such action.

Under the Delaware General Corporation Law, the board of directors has the authority to fix the compensation of directors, unless otherwise restricted by the certificate of incorporation or bylaws.

Unless directors are elected by written consent in lieu of an annual meeting, directors are elected in an annual meeting of stockholders on a date and at a time designated by or in the manner provided in the bylaws. Re-election is possible.

Classified boards are permitted.

The Delaware General Corporation Law provides that a certificate of incorporation may contain a provision eliminating or limiting the personal liability of directors (but not other controlling persons) of the corporation for monetary damages for breach of a fiduciary duty as a director, except no provision in the certificate of incorporation may eliminate or limit the liability of a director for:

- any breach of a director's duty of loyalty to the corporation or its shareholders;
- acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;
- statutory liability for unlawful payment of dividends or unlawful stock purchase or redemption; or
- any transaction from which the director derived an improper personal benefit.

BERMUDA CORPORATE LAW

Class actions and derivative actions are generally not available to shareholders under Bermuda law. The Bermuda courts, however, would ordinarily be expected to permit a shareholder to commence an action in the name of a company to remedy a wrong to the company where the act complained of is alleged to be beyond the corporate power of the company or illegal, or would result in the violation of the company's memorandum of association or bye-laws. Furthermore, consideration would be given by a Bermuda court to acts that are alleged to constitute a fraud against the minority shareholders or, for instance, where an act requires the approval of a greater percentage of the company's shareholders than that which actually approved it.

When the affairs of a company are being conducted in a manner which is oppressive or prejudicial to the interests of some part of the shareholders, one or more shareholders may apply to the Supreme Court of Bermuda, which may make such order as it sees fit, including an order regulating the conduct of the company's affairs in the future or ordering the purchase of the shares of any shareholders by other shareholders or by the company.

The Bye-laws contain a provision by virtue of which our shareholders waive any claim or right of action that they have, both individually and on our behalf, against any director or officer in relation to any action or failure to take action by such director or officer, except in respect of any fraud or dishonesty of such director or officer.

The Bye-laws contain a provision that the board of directors has the power to determine the remuneration, if any, of the directors.

The Bye-laws provide that the directors shall hold office for such term as the shareholders may determine or, in their absence of such determination, until the next annual general meeting, or until their successors are elected or appointed or their office is otherwise vacated. Re-election is possible.

Provision for staggered boards of directors may be included in a company's bye-laws.

Section 98 of the Companies Act provides generally that a Bermuda company may indemnify its directors, officers and auditors against any liability which by virtue of any rule of law would otherwise be imposed on them in respect of any negligence, default, breach of duty or breach of trust, except in cases where such liability arises from fraud or dishonesty of which such director, officer or auditor may be guilty in relation to the company. Section 98 further provides that a Bermuda company may indemnify its directors, officers and auditors against any liability incurred by them in defending any proceedings, whether civil or criminal, in which judgment is awarded in their favor or in which they are acquitted or granted relief by the Supreme Court of Bermuda pursuant to section 281 of the Companies Act.

DELAWARE CORPORATE LAW

A Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any proceeding, other than an action by or on behalf of the corporation, because the person is or was a director or officer, against liability incurred in connection with the proceeding if the director or officer acted in good faith and in a manner reasonably believed to be in, or not opposed to, the best interests of the corporation; and the director or officer, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Unless ordered by a court, any foregoing indemnification is subject to a determination that the director or officer has met the applicable standard of conduct:

- by a majority vote of the directors who are not parties to the proceeding, even though less than a quorum;
- by a committee of directors designated by a majority vote of the eligible directors, even though less than a quorum;
- by independent legal counsel in a written opinion if there are no eligible directors, or if the eligible directors so direct; or
- by the shareholders.

Moreover, a Delaware corporation may not indemnify a director or officer in connection with any proceeding in which the director or officer has been adjudged to be liable to the corporation unless and only to the extent that the court determines that, despite the adjudication of liability but in view of all the circumstances of the case, the director or officer is fairly and reasonably entitled to indemnity for those expenses which the court deems proper.

A director of a Delaware corporation has a fiduciary duty to the corporation and its shareholders. This duty has two components:

- the duty of care; and
- the duty of loyalty.

BERMUDA CORPORATE LAW

The Bye-laws contain provisions that provide that we shall indemnify our officers and directors in respect of their actions and omissions, except in respect of their fraud or dishonesty. The Bye-laws provide that the shareholders waive all claims or rights of action that they might have, individually or in right of the company, against any of the company's directors or officers for any act or failure to act in the performance of such director's or officer's duties, except in respect of any fraud or dishonesty of such director or officer. Section 98A of the Companies Act permits us to purchase and maintain insurance for the benefit of any officer or director in respect of any loss or liability attaching to him in respect of any negligence, default, breach of duty or breach of trust, whether or not we may otherwise indemnify such officer or director. We have purchased and maintain a directors' and officers' liability policy for such a purpose.

At common law, members of a board of directors owe a fiduciary duty to the company to act in good faith in their dealings with or on behalf of the company and exercise their powers and fulfill the duties of their office honestly. This duty includes the following elements: (i) a duty to act in good faith in the best interests of the company; (ii) a duty not to make a personal profit from opportunities that arise from the office of director; (iii) a duty to avoid conflicts of interest; and (iv) a duty to exercise powers for the purpose for which such powers were intended.

DELAWARE CORPORATE LAW

The duty of care requires that a director act in good faith, with the care that an ordinarily prudent person would exercise under similar circumstances. Under this duty, a director must inform himself of, and disclose to shareholders, all material information reasonably available regarding a significant transaction. The duty of loyalty requires that a director act in a manner he reasonably believes to be in the best interests of the corporation. He must not use his corporate position for personal gain or advantage. This duty prohibits self-dealing by a director and mandates that the best interest of the corporation and its shareholders take precedence over any interest possessed by a director, officer or controlling shareholder and not shared by the shareholders generally. In general, actions of a director are presumed to have been made on an informed basis, in good faith and in the honest belief that the action taken was in the best interests of the corporation. However, this presumption may be rebutted by evidence a breach of one of the fiduciary duties.

Should such evidence be presented concerning a transaction by a director, a director must prove the procedural fairness of the transaction, and that the transaction was of fair value to the corporation.

A Delaware corporation may, in its certificate of incorporation, eliminate the right of shareholders to act by written consent.

A shareholder of a Delaware corporation has the right to put any proposal before the annual meeting of shareholders, provided it complies with the notice provisions in the governing documents. A special meeting may be called by the board of directors or any other person authorized to do so in the governing documents, but shareholders may be precluded from calling special meetings.

BERMUDA CORPORATE LAW

The Companies Act also imposes a duty on directors and officers of a Bermuda company to: (i) act honestly and in good faith with a view to the best interests of the company; and (ii) exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances.

In addition, the Companies Act imposes various duties on directors and officers of a company with respect to certain matters of management and administration of the company.

The Companies Act provides that shareholders may take action by written consent, except in respect of the removal of an auditor from office before the expiry of his term or in respect of a resolution passed for the purpose of removing a director before the expiration of his term of office. A resolution in writing is passed when it is signed by the members of the company who at the date of the notice of the resolution represent such majority of votes as would be required if the resolution had been voted on at a meeting or when it is signed by all the members of the company or such other majority of members as may be provided by the bye-laws of the company.

Shareholder(s) may, as set forth below and at their own expense (unless the company otherwise resolves), require the company to: (i) give notice to all shareholders entitled to receive notice of the annual general meeting of any resolution that the shareholder(s) may properly move at the next annual general meeting; and/or (ii) circulate to all shareholders entitled to receive notice of any general meeting a statement in respect of any matter referred to in the proposed resolution or any business to be conducted at such general meeting. The number of shareholders necessary for such a requisition is either: (i) any number of shareholders representing not less than 5% of the total voting rights of all shareholders entitled to vote at the meeting to which the requisition relates; or (ii) not less than 100 shareholders.

Pursuant to the Bye-laws, any shareholder or shareholders holding or representing not less than 5% of the total voting rights wishing to propose for election as a director someone who is not an existing director or is not proposed by our board must give notice of the intention to propose the person for election in accordance with the Bye-laws.

DELAWARE CORPORATE LAW

Under the Delaware General Corporation Law, cumulative voting for elections of directors is not permitted unless the corporation's certificate of incorporation provides for it.

A Delaware corporation with a classified board may be removed only for cause with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise.

The Delaware General Corporation Law generally prohibits a Delaware corporation from engaging in certain business combinations with an "interested shareholder" for three years following the date that such person becomes an interested shareholder. An interested shareholder generally is a person or group who or which owns or owned 15.0% or more of the corporation's outstanding voting stock within the past three years.

Unless the board of directors of a Delaware corporation approves the proposal to dissolve, dissolution must be approved by shareholders holding 100.0% of the total voting power of the corporation. Only if the dissolution is initiated by the board of directors may it be approved by a simple majority of the corporation's outstanding shares. Delaware law allows a Delaware corporation to include in its certificate of incorporation a supermajority voting requirement in connection with dissolutions initiated by the board.

A Delaware corporation may vary the rights of a class of shares with the approval of a majority of the outstanding shares of such class, unless the certificate of incorporation provides otherwise.

A Delaware corporation's governing documents may be amended with the approval of a majority of the outstanding shares entitled to vote, unless the certificate of incorporation provides otherwise.

BERMUDA CORPORATE LAW

Under Bermuda law, the voting rights of shareholders are regulated by the company's bye-laws and, in certain circumstances, by the Companies Act. The Bye-laws provide for a plurality of voting for elections of directors, and cumulative voting for elections of directors is not permitted.

Under the Bye-laws, a director may be removed, with cause, by the shareholders, provided notice of the shareholders meeting convened to remove the director is given to the director. The notice must contain a statement of the intention to remove the director and must be served on the director not less than fourteen days before the meeting. The director is entitled to attend the meeting and be heard on the motion for his removal.

There is no similar law in Bermuda.

The Bye-laws contain provisions regarding "business combinations" with "interested shareholders" which are described above under "mergers and similar arrangements."

A Bermuda company may be wound up by the Bermuda court on application presented by the company itself, its creditors (including contingent or prospective creditors) or its contributories. The Bermuda court has authority to order winding up in a number of specified circumstances including where it is, in the opinion of the Bermuda court, just and equitable to do so.

A Bermuda company limited by shares may be wound up voluntarily when the shareholders so resolve in general meeting. In the case of a voluntary winding up, the company shall, from the commencement of the winding up, cease to carry on its business, except so far as may be required for the beneficial winding up thereof.

Under the Bye-laws, if at any time we have more than one class of shares, the rights attaching to any class, unless otherwise provided for by the terms of issue of the relevant class, may be varied either: (i) with the consent in writing of the holders of 75% of the issued shares of that class; or (ii) with the sanction of a resolution passed by a majority of the votes cast at a general meeting of the relevant class of shareholders at which a quorum consisting of at least two persons holding or representing issued shares of the relevant class is present. The Bye-laws specify that the creation or issue of shares ranking equally with existing shares will not, unless expressly provided by the terms of issue of existing shares, vary the rights attached to existing shares. In addition, the creation or issue of preference shares ranking prior to common shares will not be deemed to vary the rights attached to common shares or, subject to the terms of any other series of preference shares, to vary the rights attached to any other series of preference shares.

A Bermuda company's memorandum of association and bye-laws may be amended by resolutions of the board of directors and the shareholders, subject to the company's bye-laws.

DELAWARE CORPORATE LAW

Shareholders of a Delaware corporation, upon written demand under oath stating the purpose thereof, have the right during the usual hours for business to inspect for any proper purpose, and to obtain copies of list(s) of shareholders and other books and records of the corporation and its subsidiaries, if any, to the extent the books and records of such subsidiaries are available to the corporation.

The board of directors may approve a dividend without shareholder approval. Subject to any restrictions contained in its certificate of incorporation, the board may declare and pay dividends upon the shares of its capital stock either:

- out of its surplus, or
- in case there is no such surplus, out of its net profits for the fiscal year in which the dividend is declared and/or the preceding fiscal year.

Stockholder approval is required to authorize capital stock in excess of that provided in the charter. Directors may issue authorized shares without stockholder approval.

All creation of shares require the board of directors to adopt a resolution or resolutions, pursuant to authority expressly vested in the board of directors by the provisions of the company's certificate of incorporation.

BERMUDA CORPORATE LAW

Members of the general public have a right to inspect the public documents of a company available at the office of the Registrar of Companies in Bermuda. These documents include the company's memorandum of association/continuance, including its objects and powers, and certain alterations to the memorandum of association/continuance. The shareholders have the additional right to inspect the bye-laws of the company, minutes of general meetings and the company's audited financial statements, which must be presented to the annual general meeting. The register of members of a company is also open to inspection by shareholders without charge, and by members of the general public on payment of a fee. The register of members is required to be open for inspection for not less than two hours in any business day (subject to the ability of a company to close the register of members for not more than thirty days in a year). A company is required to maintain its share register in Bermuda but may, subject to the provisions of the Companies Act, establish a branch register outside of Bermuda. A company is required to keep at its registered office a register of directors and officers that is open for inspection for not less than two hours in any business day by members of the public without charge. Bermuda law does not, however, provide a general right for shareholders to inspect or obtain copies of any other corporate records.

Under Bermuda law, the board of directors may declare a dividend without shareholder approval, but a company may not declare or pay dividends if there are reasonable grounds for believing that: (i) the company is, or would after the payment be, unable to pay its liabilities as they become due; or (ii) that the realizable value of its assets would thereby be less than its liabilities. Under the Bye-laws, each common share is entitled to dividends if, as and when dividends are declared by our board of directors, subject to any preferred dividend right of the holders of any preference shares.

The authorized share capital of a Bermuda company is determined by the company's shareholders.

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering (i) an aggregate of 5,714,286 common shares and/or Pre-Funded Warrants to purchase 5,714,286 common shares and (ii) Common Warrants to purchase up to an aggregate of 5,714,286 common shares, at an assumed price of \$1.40 per common share and accompanying Common Warrant (based upon the last reported sale price of our common shares on the Nasdaq Capital Market on March 20, 2023). Each common share or Pre-Funded Warrant is being sold together with a Common Warrant to purchase one common share. The common shares or Pre-Funded Warrants and accompanying Common Warrants will be issued separately. We are also registering the common shares issuable from time to time upon exercise of the Pre-Funded Warrants and Common Warrants offered hereby.

Common Shares

The material terms and provisions of our common shares and each other class of our securities which qualifies or limits our common shares are described under the caption “Description of Share Capital and Bye-laws” in this prospectus.

Pre-Funded Warrants

The following summary of certain terms and provisions of the Pre-Funded Warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the Pre-Funded Warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Pre-Funded Warrants for a complete description of the terms and conditions of the Pre-Funded Warrants.

Duration and Exercise Price

Each Pre-Funded Warrant offered hereby will have an initial exercise price equal to CHF 0.01 per common share. The Pre-Funded Warrants will be exercisable immediately, and may be exercised at any time until the Pre-Funded Warrants are exercised in full. The exercise price and number of common shares issuable upon exercise is subject to appropriate proportional adjustment in the event of share dividends, share splits, reorganizations or similar events affecting our common shares and the exercise price.

Exercisability

The Pre-Funded Warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and within the earlier of (i) two trading days and (ii) the number of trading days comprising the standard settlement period with respect to the common shares as in effect on the date of delivery of the notice of exercise thereafter, payment in full for the number of common shares purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder may not exercise any portion of the Pre-Funded Warrants to the extent that the holder, together with its affiliates and any other persons acting as group together with any such persons, would own more than 4.99% (or, at the election of the purchaser, 9.99%) of the number of common shares outstanding immediately after exercise (the “Beneficial Ownership Limitation”); provided that a holder with Beneficial Ownership Limitation of 4.99%, upon notice to us and effective 61 days after the date such notice is delivered to us may increase the Beneficial Ownership Limitation so long as it in no event exceeds 9.99% of the number of common shares outstanding immediately after exercise.

Cashless Exercise

The Pre-Funded Warrants may also be exercised, in whole or in part, at such time by means of “cashless exercise” in which the holder shall be entitled to receive upon such exercise (either in whole or in part) the net number of common shares determined according to a formula set forth in the Pre-Funded Warrants, which generally provides for a number of common shares equal to (A)(1) the last closing trade price for such security on the Nasdaq Capital Market on (x) the trading day immediately preceding the date of the applicable notice of exercise, if the notice of exercise is executed and delivered on day that is not a trading day or prior to the opening of “regular trading hours” on a trading day or (y) the trading day of the notice of exercise, if the notice of exercise is executed and delivered after the close of “regular trading hours” on such trading day; (2) at the option of the holder, either (x) the volume weighted average price on the trading day immediately preceding the date of the applicable notice of exercise or (y) the bid price of our common shares on the Nasdaq Capital Market as of the time of the holder’s execution of the applicable notice of exercise if such notice of exercise is executed during “regular trading hours” on a trading day and is delivered within two hours thereafter (including until two hours after the close of “regular trading hours” on a trading day); or (3) the last closing trade price for such security on the Nasdaq Capital Market on the day of the notice of exercise, if the notice of exercise is executed and delivered after “regular trading hours” on a trading day, less (B) the exercise price, multiplied by (C) the number of common shares the Pre-Funded Warrant was exercisable into, with such product then divided by the number determined under clause (A) in the this sentence.

Fractional Shares

No fractional common shares will be issued upon the exercise of the Pre-Funded Warrants. Rather, we will, at our election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price or round up to the next whole common share.

Transferability

Subject to applicable laws, a Pre-Funded Warrant may be transferred at the option of the holder upon surrender of the Pre-Funded Warrant to us together with the appropriate instruments of transfer and funds sufficient to pay any transfer taxes payable upon such transfer.

Trading Market

There is no trading market available for the Pre-Funded Warrants on any securities exchange or nationally recognized trading system. We do not intend to list the Pre-Funded Warrants on any securities exchange or nationally recognized trading system. The common shares issuable upon exercise of the Pre-Funded Warrants are currently listed on the Nasdaq Capital Market under the symbol “CYTO.”

Rights as a Shareholder

Except as otherwise provided in the Pre-Funded Warrants or by virtue of such holder’s ownership of the underlying common shares, the holders of the Pre-Funded Warrants do not have the rights or privileges of holders of our common shares, including any voting rights, until they exercise their Pre-Funded Warrants.

Fundamental Transaction

In the event of a fundamental transaction, as described in the Pre-Funded Warrants and generally including any reorganization, recapitalization or reclassification of our common shares, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common shares, the holders of the Pre-Funded Warrants will be entitled to receive upon exercise of the Pre-Funded Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Pre-Funded Warrants immediately prior to such fundamental transaction.

Governing Law

The Pre-Funded Warrants are governed by New York law.

Common Warrants

The following summary of certain terms and provisions of the Common Warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the Common Warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of Common Warrants for a complete description of the terms and conditions of the Common Warrants.

Form

The Common Warrants will be issued in electronic book-entry form to the investors.

Exercisability

The Common Warrants are exercisable at any time after their original issuance and at any time up to the date that is five years after their original issuance. The Common Warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the issuance of the common shares underlying the Common Warrants under the Securities Act is effective and available for the issuance of such common shares, by payment in full in immediately available funds for the number of common shares purchased upon such exercise. If a registration statement registering the issuance of the common shares underlying the Common Warrants under the Securities Act is not effective or available, the holder may, in its sole discretion, elect to exercise the Common Warrant through a cashless exercise, in which case the holder would receive upon such exercise the net number of common shares determined according to the formula set forth in the Common Warrant. No fractional common shares will be issued in connection with the exercise of a Common Warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

Exercise Limitation

A holder will not have the right to exercise any portion of the Common Warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of our common shares outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Common Warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon at least 61 days' prior notice from the holder to us.

Exercise Price

The exercise price per whole common share purchasable upon exercise of the Common Warrants is expected to be \$ per common share (120% of the price at which a common share and accompanying Common Warrant are sold to the public in this offering). The exercise price is also subject to appropriate adjustment in the event of certain share dividends and distributions, share splits, share combinations, reclassifications or similar events affecting our common shares and also upon any distributions of assets, including cash, shares or other property to our shareholders, provided that the exercise price is at least the par value per common share.

Transferability

Subject to applicable laws, the Common Warrants may be offered for sale, sold, transferred or assigned without our consent.

Exchange Listing

We have applied to list the Common Warrants offered in this offering on Nasdaq under the symbol "CYTOW." No assurance can be given that such listing will be approved or that a trading market will develop. The common shares issuable upon exercise of the Common Warrants are currently listed on the Nasdaq Capital Market under the symbol "CYTO."

Fundamental Transactions

In the event of a fundamental transaction, as described in the Common Warrants and generally including any reorganization, recapitalization or reclassification of our common shares, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common shares, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common shares, the holders of the Common Warrants will be entitled to receive upon exercise of the Common Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Common Warrants immediately prior to such fundamental transaction.

Rights as a Stockholder

Except as otherwise provided in the Common Warrants or by virtue of such holder's ownership of our common shares, the holder of a Common Warrant does not have the rights or privileges of a holder of our common shares, including any voting rights, until the holder exercises the Common Warrant.

Governing Law

The Common Warrants are governed by New York law.

TAXATION

The following summary contains a description of the material Bermuda and U.S. federal income tax consequences of the acquisition, ownership and disposition of common shares, Common Warrants or Pre-Funded Warrants, but it does not purport to be a comprehensive description of all the tax considerations that may be relevant to a decision to purchase common shares, Common Warrants or Pre-Funded Warrants. The summary is based upon the tax laws of Bermuda and regulations thereunder and on the tax laws of the United States and regulations thereunder as of the date hereof, which are subject to change.

Bermuda Tax Considerations

At the present time, there is no Bermuda income or profits tax, withholding tax, capital gains tax, capital transfer tax, estate duty or inheritance tax payable by us or by our shareholders in respect of our shares. We have obtained an assurance from the Minister of Finance of Bermuda under the Exempted Undertakings Tax Protection Act 1966 that, in the event that any legislation is enacted in Bermuda imposing any tax computed on profits or income, or computed on any capital asset, gain or appreciation or any tax in the nature of estate duty or inheritance tax, such tax shall not, until March 31, 2035, be applicable to us or to any of our operations or to our shares, debentures or other obligations except insofar as such tax applies to persons ordinarily resident in Bermuda or is payable by us in respect of real property owned or leased by us in Bermuda.

Material U.S. Federal Income Tax Considerations for U.S. Holders

The following is a description of the material U.S. federal income tax consequences relating to the acquisition, ownership and disposition of our common shares, Common Warrants or Pre-Funded Warrants by a U.S. Holder (defined below), but it does not purport to be a comprehensive description of all tax considerations that may be relevant to a particular person's decision to acquire the common shares, Common Warrants or Pre-Funded Warrants. This discussion addresses only the U.S. federal income tax consequences to U.S. Holders that are initial purchasers of our common shares, Common Warrants or Pre-Funded Warrants and that will hold such common shares, Common Warrants or Pre-Funded Warrants as capital assets for U.S. federal income tax purposes. In addition, it does not describe all of the tax consequences that may be relevant in light of a U.S. Holder's particular circumstances, including alternative minimum tax consequences, the potential application of the provisions of the Internal Revenue Code of 1986, as amended (the "Code"), known as the Medicare contribution tax (except as explicitly provided below under "Net investment income tax") and tax consequences applicable to U.S. Holders subject to special rules, including, without limitation:

- banks, certain financial institutions and insurance companies;
- brokers, dealers or traders in securities or persons who use a mark-to-market method of tax accounting;
- persons holding common shares, Common Warrants or Pre-Funded Warrants as part of a straddle, wash sale, or conversion transaction or persons entering into a constructive sale with respect to the common shares, Common Warrants or Pre-Funded Warrants;
- persons whose functional currency for U.S. federal income tax purposes is not the U.S. dollar;
- entities classified as partnerships for U.S. federal income tax purposes and other pass-through entities, and investors in such pass-through entities;
- tax-exempt entities, including an "individual retirement account" or "Roth IRA";
- persons that own or are deemed to own ten percent or more of the vote or value of our shares;
- persons who acquired our common shares, Common Warrants or Pre-Funded Warrants pursuant to the exercise of an employee stock option or otherwise as compensation; or
- persons holding common shares, Common Warrants or Pre-Funded Warrants in connection with a trade or business conducted outside of the United States.

If an entity that is classified as a partnership for U.S. federal income tax purposes holds common shares, Common Warrants or Pre-Funded Warrants, the U.S. federal income tax treatment of a partner will generally depend on the status of the partner and the activities of the partnership. Partnerships or other pass-through entities holding common shares, Common Warrants or Pre-Funded Warrants and partners in such partnerships or other pass-through entities should consult their tax advisers as to their particular U.S. federal income tax consequences of holding and disposing of the common shares, Common Warrants or Pre-Funded Warrants through a partnership or other pass-through entity, as applicable.

This discussion is based on the Code, administrative pronouncements, judicial decisions and final, temporary and proposed Treasury regulations, all as of the date hereof, any of which is subject to change, possibly with retroactive effect.

A “U.S. Holder” is a beneficial owner of common shares, Common Warrants or Pre-Funded Warrants that is, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation, or other entity taxable as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States, any state therein or the District of Columbia; or
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust with respect to which a U.S. court is able to exercise primary supervision over its administration and one or more U.S. persons have the authority to control all of its substantial decisions, or that has a valid election in effect to be treated as a U.S. person under applicable U.S. Treasury Regulations.

U.S. Holders should consult their tax advisers concerning the U.S. federal, state, local and non-U.S. tax consequences of purchasing, owning and disposing of common shares, Common Warrants or Pre-Funded Warrants in their particular circumstances.

Income Tax Treatment of Pre-Funded Warrants

Although it is not entirely free from doubt, a Pre-Funded Warrant should be treated as a common share for U.S. federal income tax purposes and a U.S. Holder of Pre-Funded Warrants should generally be taxed in the same manner as a U.S. Holder of common shares, as described below. U.S. Holders are urged to consult their own tax advisors regarding the risks associated with the acquisition of Pre-Funded Warrants pursuant to this offering (including potential alternative characterizations). The balance of this discussion generally assumes that the characterization described above is respected for U.S. federal income tax purposes and the discussion below, to the extent it pertains to common shares, is generally intended to also pertain to Pre-Funded Warrants. Some portions of the below discussion make reference to potential consequences associated with the purchase, ownership and disposition of the Pre-Funded Warrants independent of their potential characterization as common shares.

Allocation of Purchase Price

For U.S. federal income tax purposes, the purchase price for each common share and Pre-Funded Warrant sold together with an accompanying Common Warrant should be allocated between the two components thereof in proportion to their relative fair market values at the time the unit is purchased by the holder. This allocation of the purchase price will establish the holder’s initial tax basis for U.S. federal income tax purposes in the share of common stock or Pre-Funded Warrant, as applicable, and the Common Warrant sold together with it. The separation of the share of common stock or Pre-Funded Warrant, as applicable, and the accompanying Common Warrant should not be a taxable event for U.S. federal income tax purposes. Each holder should consult his, her or its own tax advisor regarding the allocation of the purchase price.

Passive Foreign Investment Company Rules

Special U.S. tax rules apply to U.S. Holders of stock in a company that are considered to be a PFIC. In general, a non-U.S. corporation will be considered a PFIC for any taxable year in which (i) 75% or more of its gross income consists of passive income or (ii) 50% or more of the average quarterly value of its assets consists of assets that produce, or are held for the production of, passive income. For purposes of the above calculations, a non-U.S. corporation that directly or indirectly owns at least 25% by value of the shares of another corporation is treated as if it held its proportionate share of the assets of the other corporation and received directly its proportionate share of the income of the other corporation. Passive income generally includes dividends, interest, rents, royalties and capital gains. Cash is a passive asset for PFIC purposes. Goodwill (the value of which may be determined by reference to the company’s market capitalization) is generally treated as an active asset to the extent attributable to activities intended to produce active income.

Based upon our current and projected income and assets, and projections as to the value of our assets, we do not anticipate that we will be a PFIC for the 2023 taxable year or the foreseeable future. There can be no assurance that the IRS will agree with our conclusion and that the IRS would not successfully challenge our position. Furthermore, there can be no assurance regarding our PFIC status for the current year or any particular year in the future because PFIC status is factual in nature, depends upon factors not wholly within our control, generally cannot be determined until the close of the taxable year in question and is determined annually. Our status as a PFIC will depend on the nature and composition of our income and the nature, composition and value of our assets (which may be determined based on the fair market value of each asset, with the value of goodwill and going concern value being determined in large part by reference to the market value of our common shares, which may be volatile). Our status may also depend, in part, on how quickly we utilize the cash proceeds from our fundraising activities in our business. Accordingly, there can be no assurance that we will not be a PFIC in the current or for any future taxable year. Therefore, U.S. Holders should invest in our common shares, Common Warrants or Pre-Funded Warrants only if they are willing to bear the U.S. federal income tax consequences associated with investments in PFICs.

If we are a PFIC for any taxable year and any of our non-U.S. subsidiaries or other companies in which we own equity interests were also a PFIC (any such entity, a “Lower-tier PFIC”), under attribution rules, U.S. Holders will be deemed to own their proportionate shares of Lower-tier PFICs and will be subject to U.S. federal income tax according to the rules described in the following paragraphs on (i) certain distributions by a Lower-tier PFIC and (ii) a disposition of shares of a Lower-tier PFIC, in each case as if the U.S. Holder held such shares directly, even if the U.S. Holder has not received the proceeds of those distributions or dispositions.

Generally, if we are a PFIC for any taxable year during which a U.S. Holder holds our common shares, Common Warrants or Pre-Funded Warrants, the U.S. Holder may be subject to certain adverse tax consequences. If we are a PFIC for any taxable year during which a U.S. Holder holds our common shares, Common Warrants or Pre-Funded Warrants the U.S. Holder may be subject to certain adverse tax consequences. Unless a U.S. Holder makes a timely “mark-to-market” election or “qualified electing fund” election, each as discussed below, gain recognized on a disposition (including, under certain circumstances, a pledge) of common shares, Common Warrants or Pre-Funded Warrants by the U.S. Holder, or on an indirect disposition of shares of a Lower-tier PFIC, will be allocated ratably over the U.S. Holder’s holding period for the common shares, Common Warrants or Pre-Funded Warrants. The amounts allocated to the taxable year of disposition and to years before we became a PFIC, if any, will be taxed as ordinary income. The amounts allocated to each other taxable year will be subject to tax at the highest rate in effect for that taxable year for individuals or corporations, as appropriate, and an interest charge will be imposed on the tax attributable to the allocated amounts. Further, to the extent that any distribution received by a U.S. Holder on our common shares, Common Warrants or Pre-Funded Warrants, to the extent applicable, (or a distribution by a Lower-tier PFIC to its shareholder that is deemed to be received by a U.S. Holder) exceeds 125% of the average of the annual distributions on the shares received during the preceding three years or the U.S. Holder’s holding period, whichever is shorter, the distribution will be subject to taxation in the same manner as gain, described immediately above.

If we are a PFIC for any year during which a U.S. Holder holds common shares, Common Warrants or Pre-Funded Warrants, we generally will continue to be treated as a PFIC with respect to the U.S. Holder for all succeeding years during which the U.S. Holder holds common shares, Common Warrants or Pre-Funded Warrants, even if we cease to meet the threshold requirements for PFIC status. U.S. Holders should consult their tax advisers regarding the potential availability of a “deemed sale” election that would allow them to eliminate this continuing PFIC status under certain circumstances.

If we are a PFIC and our common shares are “regularly traded” on a “qualified exchange,” a U.S. Holder may make a mark-to-market election with respect to the shares that would result in tax treatment different from the general tax treatment for PFICs described above. Our common shares will be treated as “regularly traded” in any calendar year in which more than a de minimis quantity of the common shares is traded on a qualified exchange on at least 15 days during each calendar quarter. Nasdaq, on which the common shares are currently listed, is a qualified exchange for this purpose. U.S. Holders should consult their tax advisers regarding the availability and advisability of making a mark-to-market election in their particular circumstances and the consequences to them if the common shares are delisted from Nasdaq. In particular, U.S. Holders should consider carefully the impact of a mark-to-market election with respect to their common shares given that we may have Lower-tier PFICs for which a mark-to-market election may not be available. In addition, U.S. Holders will not be able to make a mark-to-market election with respect to the Common Warrants.

If we are a PFIC and a U.S. Holder makes the mark-to-market election with respect to its common shares, the U.S. Holder generally will recognize as ordinary income any excess of the fair market value of the common shares at the end of each taxable year over their adjusted tax basis, and will recognize an ordinary loss in respect of any excess of the adjusted tax basis of the common shares over their fair market value at the end of the taxable year (but only to the extent of the net amount of income previously included as a result of the mark-to-market election). If a U.S. Holder makes the election, the U.S. Holder’s tax basis in the common shares will be adjusted to reflect the income or loss amounts recognized. Any gain recognized on a sale or other disposition of common shares in a year in which we are a PFIC will be treated as ordinary income and any loss will be treated as an ordinary loss (but only to the extent of the net amount of income previously included as a result of the mark-to-market election). Losses that exceed this limitation are subject to the rules generally applicable to losses provided in the Code and U.S. Treasury Regulations (see “Material U.S. Federal Income Tax Considerations for U.S. Holders — Sale or Other Disposition of Common Shares, Common Warrants or Pre-Funded Warrants” below). Amounts treated as ordinary income will not be eligible for the preferential tax rates applicable to “qualified dividend income” or long-term capital gains. Distributions paid on common shares will be treated as discussed below under “Taxation of Distributions.” Once made, the election cannot be revoked without the consent of the IRS unless the common shares cease to be marketable.

Any mark-to-market election made by a U.S. Holder for the common shares will also apply to any common shares acquired upon exercise of a Pre-Funded Warrant. As a result, if a mark-to-market election has been made by a U.S. Holder with respect to common shares, any common shares received upon the exercise of a Pre-Funded Warrant will automatically be marked-to-market in the year of exercise. Because a U.S. Holder’s holding period for common shares received upon the exercise of Pre-Funded Warrants includes the period during which such U.S. Holder held the Pre-Funded Warrants, a U.S. Holder will be treated as making a mark-to-market election with respect to such common shares after the beginning of such U.S. Holder’s holding period for such common shares unless such common shares are acquired in the same tax year as the year in which the U.S. Holder acquired its Pre-Funded Warrants. Consequently, the adverse rules under Section 1291 described above generally will apply to the mark-to-market gain realized in the tax year in which common shares are received upon the exercise of the Pre-Funded Warrants. However, the general mark-to-market rules will apply to subsequent tax years.

A mark-to-market election is not permitted for the shares of any Lower-tier PFIC. In addition, a mark-to-market election may not be available with respect to the Pre-Funded Warrants, which may not be treated as regularly traded on a qualified exchange. U.S. Holders should consult their tax advisers regarding the availability of, and procedure for making, a mark-to-market election.

Alternatively, a U.S. Holder of our common shares or Pre-Funded Warrants can make an election, if we provide the necessary information, to treat us and each Lower-tier PFIC as a qualified electing fund (a “QEF Election”) in the first taxable year that we (and each Lower-tier PFIC) are treated as a PFIC with respect to the U.S. Holder. A U.S. Holder must make the QEF Election for each PFIC by attaching a separate properly completed IRS Form 8621 (Information Return by a Shareholder of a Passive Foreign Investment Company or Qualified Electing Fund) for each PFIC to its timely filed U.S. federal income tax return. Upon request of a U.S. Holder, we intend to provide the information necessary for a U.S. Holder to make a QEF Election with respect to us for any other taxable year for which we determine that we were a PFIC and will use commercially reasonable efforts to cause each Lower-tier PFIC that we control to provide such information with respect to such Lower-tier PFIC. However, no assurance can be given that such QEF Election information will be available for any Lower-tier PFIC and we cannot guarantee that we will continue to provide such determination or information for future years.

If a U.S. Holder makes a QEF Election with respect to a PFIC, the U.S. Holder will be currently taxable on its pro rata share of the PFIC’s ordinary earnings and net capital gain (at ordinary income and capital gain rates, respectively) for each taxable year that the entity is classified as a PFIC. If a U.S. Holder makes a QEF Election with respect to us, any distributions paid by us out of our earnings and profits that were previously included in the U.S. Holder’s income under the QEF Election will not be taxable to the U.S. Holder. A U.S. Holder will increase its tax basis in its common shares or Pre-Funded Warrants by an amount equal to any income included under the QEF Election and will decrease its tax basis by any amount distributed on the common shares or Pre-Funded Warrants, to the extent applicable, that is not included in its income. In addition, a U.S. Holder will recognize capital gain or loss on the disposition of common shares or Pre-Funded Warrants in an amount equal to the difference between the amount realized and its adjusted tax basis in the common shares or Pre-Funded Warrants. A U.S. Holder will not be taxed on the ordinary income and net capital gain under the QEF rules for any year that we are not a PFIC. U.S. Holders should note that if we are a PFIC and they make QEF Elections with respect to us and Lower-tier PFICs, they may be required to pay U.S. federal income tax with respect to their common shares or Pre-Funded Warrants for any taxable year significantly in excess of any cash distributions received on the common shares or Pre-Funded for such taxable year. U.S. Holders should note that a QEF election cannot be made with respect to our Common Warrants. U.S. Holders should consult their tax advisers regarding making QEF Elections in their particular circumstances.

Furthermore, if with respect to a particular U.S. Holder we are treated as a PFIC for the taxable year in which we paid a dividend or the prior taxable year, the preferential dividend rate with respect to dividends paid to certain non-corporate U.S. Holders will not apply.

If we are a PFIC for any taxable year during which a U.S. Holder holds common shares or Pre-Funded Warrants, such U.S. Holder will be required to file an annual information report with respect to the Company and any Lower-tier PFIC, generally with such U.S. Holder’s U.S. federal income tax return on IRS Form 8621.

U.S. Holders should consult their tax advisers concerning our PFIC status and the tax considerations relevant to an investment in a PFIC.

Taxation of Distributions

As discussed above under “Dividend Policy,” we do not currently expect to make distributions on our common shares. In the event that we do make distributions of cash or other property, subject to the PFIC rules described above, distributions paid on common shares, other than certain pro rata distributions of common shares, will be treated as dividends to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). Because we may not calculate our earnings and profits under U.S. federal income tax principles, we expect that distributions generally will be reported to U.S. Holders as dividends. The U.S. dollar amount of any dividend will be treated as foreign-source dividend income to U.S. Holders and will not be eligible for the dividends-received deduction generally available to U.S. corporations under the Code. Dividends will be included in a U.S. Holder’s income on the date of the U.S. Holder’s receipt of the dividend. Distributions of cash or other property, subject to the PFIC rules described above, in excess of our current and accumulated earnings and profits (as determined under U.S. federal income tax principles) will be treated as a return of capital to the extent of (and in reduction of) the U.S. Holder’s tax basis in the U.S. Holder’s common shares, Common Warrants or Pre-Funded Warrants (as applicable) and any such amount in excess of that basis will be treated as gain from the sale of common shares, Common Warrants or Pre-Funded Warrants (as applicable), as discussed below.

Sale or Other Disposition of Common Shares, Common Warrants or Pre-Funded Warrants

Subject to the PFIC rules described above, for U.S. federal income tax purposes, gain or loss realized on the sale or other disposition of common shares, Common Warrants or Pre-Funded Warrants will be capital gain or loss, and will be long-term capital gain or loss if the U.S. Holder held the common shares, Common Warrants or Pre-Funded Warrants for more than one year. The amount of the gain or loss will equal the difference between the U.S. Holder’s tax basis in the common shares, Common Warrants or Pre-Funded Warrants disposed of and the amount realized on the disposition, in each case as determined in U.S. dollars. This gain or loss will generally be U.S.-source gain or loss for foreign tax credit purposes. The deductibility of capital losses is subject to limitations. U.S. Holders should consult their tax advisers regarding the proper treatment of gain or loss, the availability of a foreign tax credit, and for U.S. Holders that sell common shares, Common Warrants or Pre-Funded Warrants for an amount denominated in a currency other than the U.S. dollar should consult their tax advisers regarding any potential foreign currency gain or loss that may have to be recognized.

Certain Adjustments to the Common Warrants or Pre-Funded Warrants

Under Section 305 of the Code, an adjustment to the number of common shares that will be issued on the exercise of the Common Warrants or Pre-Funded Warrants, or an adjustment to the exercise price of the Pre-Funded Warrants, may be treated as a constructive distribution to a U.S. Holder of the Common Warrants or Pre-Funded Warrants if, and to the extent that, such adjustment has the effect of increasing such U.S. Holder’s proportionate interest in our earnings and profits or our assets, depending on the circumstances of such adjustment (for example, if such adjustment is to compensate for a distribution of cash or property to the shareholders). Adjustments to the exercise price of the Common Warrants or Pre-Funded Warrants made pursuant to a bona fide reasonable adjustment formula that has the effect of preventing dilution of the interest of the holders of the Common Warrants or Pre-Funded Warrants should generally not be considered to result in a constructive distribution. Any such constructive distribution would be taxable whether or not there is an actual distribution of cash or other property (see more detailed discussion of the rules applicable to distributions we make at “Material U.S. Federal Income Tax Considerations for U.S. Holders — Taxation of Distributions” above).

Exercise of Common Warrants or Pre-Funded Warrants

Under current law, (i) a U.S. Holder will not be required to recognize income, gain or loss upon the exercise of a Common Warrant or Pre-Funded Warrant, (ii) a U.S. Holder's basis in the common shares received upon exercise will be equal to the sum of (a) the U.S. Holder's basis in the Common Warrant or Pre-Funded Warrant and (b) the exercise price of the Common Warrant or Pre-Funded Warrant, and (iii) a U.S. Holder's holding period in the common shares received upon exercise will include the holding period in the Common Warrants or Pre-Funded Warrants exchanged therefor. However, the tax consequences of a cashless exercise of a Common Warrant or Pre-Funded Warrant are unclear and could differ from the consequences described above. It is possible that a cashless exercise could be a taxable event. Under a proposed U.S. Treasury Regulation (which is proposed to have retroactive effect), a U.S. Holder would recognize gain if the Common Warrant or Pre-Funded Warrant was treated as stock of a PFIC with respect to a U.S. Holder at the time of the exercise of the Common Warrants or Pre-Funded Warrants and the stock received upon the exercise was not treated as stock of a PFIC for the taxable year in which the exercise occurs. U.S. Holders should consult their own tax advisors regarding the U.S. federal income tax consequences of an exercise of the Common Warrants or Pre-Funded Warrants, including with respect to whether the exercise is a taxable event, and their holding period and tax basis in the common shares received.

Information Reporting and Backup Withholding

Payments of dividends and sales proceeds that are made within the United States or through certain U.S.-related financial intermediaries generally are subject to information reporting, and may be subject to backup withholding, unless (i) the U.S. Holder is a corporation or other exempt recipient or (ii) in the case of backup withholding, the U.S. Holder provides a correct taxpayer identification number and certifies that it is not subject to backup withholding.

Backup withholding is not an additional tax. The amount of any backup withholding from a payment to a U.S. Holder will be allowed as a credit against the holder's U.S. federal income tax liability and may entitle it to a refund, provided that the required information is timely furnished to the IRS.

Net investment income tax

Certain U.S. Holders that are individuals, estates or trusts and whose income exceeds certain thresholds generally are subject to a 3.8% tax on all or a portion of their net investment income, which may include their gross dividend income and net gains from the disposition of the ordinary shares. If you are a U.S. Holder that is an individual, estate or trust, you should consult your tax advisors regarding the applicability of this net investment income tax to your income and gains in respect of your investment in the common shares.

Information Reporting with Respect to Foreign Financial Assets

Certain U.S. Holders who are individuals and certain entities may be required to report information relating to an interest in our common shares, subject to certain exceptions (including an exception for common shares held in accounts maintained by certain U.S. financial institutions). U.S. Holders should consult their tax advisors regarding whether or not they are obligated to report information relating to their ownership and disposition of the common shares.

The above description is not intended to constitute a complete analysis of all tax consequences relating to the acquisition, ownership and disposition of our common shares, Common Warrants or Pre-Funded Warrants. You should consult your tax advisor concerning the tax consequences of the acquisition, ownership and disposition of our common shares, Common Warrants or Pre-Funded Warrants in your particular situation.

UNDERWRITING

ThinkEquity LLC is acting as representative of the underwriters. Subject to the terms and conditions of an underwriting agreement between us and the representative, we have agreed to sell to each underwriter named below, and each underwriter named below has severally agreed to purchase, at the public offering price less the underwriting discounts set forth on the cover page of this prospectus, the number of common shares, Pre-Funded Warrants and Common Warrants listed next to its name in the following table:

Underwriters	Number of Common Shares	Number of Pre-Funded Warrants	Number of Common Warrants
ThinkEquity LLC			
Total			

The underwriting agreement provides that the obligations of the underwriters to pay for and accept delivery of the common shares and/or Pre-Funded Warrants and accompanying Common Warrants offered by this prospectus are subject to various conditions and representations and warranties, including the approval of certain legal matters by their counsel and other conditions specified in the underwriting agreement. The common shares and/or Pre-Funded Warrants and accompanying Common Warrants are offered by the underwriters, subject to prior sale, when, as and if issued to and accepted by them. The underwriters reserve the right to withdraw, cancel or modify the offer to the public and to reject orders in whole or in part. The underwriters are obligated to take and pay for all of the common shares and/or Pre-Funded Warrants and accompanying Common Warrants offered by this prospectus if any such common shares and/or Pre-Funded Warrants and accompanying Common Warrants are taken, other than those common shares, Pre-Funded Warrants and Common Warrants covered by the over-allotment option described below.

We have agreed to indemnify the underwriters against specified liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriters may be required to make in respect thereof.

Discount, Commissions and Expenses

The underwriters propose initially to offer the common shares and Pre-Funded Warrants and accompanying Common Warrants to the public at the public offering price set forth on the cover page of this prospectus and to dealers at those prices less a concession not in excess of \$ per common share and accompanying Common Warrants and \$ per Pre-Funded Warrant and accompanying Common Warrants. If all of the common shares and/or Pre-Funded Warrants and accompanying Common Warrants offered by us are not sold at the public offering price, the underwriters may change the offering price and other selling terms by means of a supplement to this prospectus.

The following table shows the public offering price, underwriting discounts and commissions and proceeds before expenses to us. The information assumes either no exercise or full exercise of the over-allotment option we granted to the representative of the underwriters.

	Per Common Share and Common Warrant	Per Pre-Funded Warrant and Common Warrant	Total Without Over- Allotment Option	Total With Over- Allotment Option
Public offering price				
Underwriting discount				
Proceeds, before expenses, to us				

We have paid an expense deposit of \$30,000 to the representative, which will be applied against the out-of-pocket accountable expenses that will be paid by us to the underwriters in connection with this offering, and will be reimbursed to us to the extent not actually incurred in compliance with FINRA Rule 5110(f)(2)(C).

We have agreed to reimburse certain expenses of the underwriters relating to this offering as set forth in the underwriting agreement, including the fees and expenses of the underwriter's legal counsel. However, the maximum amount we have agreed to reimburse the underwriter for their accountable expenses will not exceed \$192,500.

Our total estimated expenses of the offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding underwriting discounts and commissions, are approximately \$475,000.

Over-allotment Option

We have granted to the underwriters an option exercisable not later than 45 days after the closing of this offering to purchase up to an additional 857,142 common shares and/or Pre-Funded Warrants to purchase up to 857,142 common shares in lieu thereof and/or Common Warrants to purchase up to 857,142 common shares at the public offering price per common share, Pre-Funded Warrant and/or Common Warrant less the underwriting discounts and commissions. The underwriters may exercise the option solely to cover overallotments, if any, made in connection with this offering. The purchase price to be paid per additional common share or Pre-Funded Warrant will be equal to the public offering price of one common share or Pre-Funded Warrant, in each case less \$0.01 allocated for each Common Warrant, less the underwriting discounts and commissions, and the purchase price to be paid per additional Common Warrant will be \$0.01, less underwriting discounts and commissions. If any additional common shares, Pre-Funded Warrants or Common Warrants are purchased pursuant to the over-allotment option, the underwriters will offer these common shares, Pre-Funded Warrants and Common Warrants on the same terms as those on which the other securities are being offered.

Indemnification

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act and liabilities arising from breaches of representations and warranties contained in the underwriting agreement, or to contribute to payments that the underwriters may be required to make in respect of those liabilities.

Lock-up Agreements

Pursuant to "lock-up" agreements, we, our executive officers and directors, and certain holders of 5% or more of the outstanding common shares, have agreed, without the prior written consent of the representative not to directly or indirectly, offer to sell, sell, pledge or otherwise transfer or dispose of any of our common shares (or enter into any transaction or device that is designed to, or could be expected to, result in the transfer or disposition by any person at any time in the future of our common shares), enter into any swap or other derivatives transaction that transfers to another, in whole or in part, any of the economic benefits or risks of ownership of our common shares, make any demand for or exercise any right or cause to be filed a registration statement, including any amendments thereto, with respect to the registration of any common shares or securities convertible into or exercisable or exchangeable for common shares or any other securities of ours or publicly disclose the intention to do any of the foregoing, subject to customary exceptions, for a period of six months after the date of this prospectus in the case of our directors, executive officers, the Company and any successor of the Company and three months after the date of this prospectus in the case of certain stockholders.

Stabilization

In connection with this offering, the underwriters may engage in over-allotment transactions, syndicate-covering transactions, stabilizing transactions, penalty bids and purchases to cover positions created by short sales.

Stabilizing transactions permit bids to purchase securities, so long as the stabilizing bids do not exceed a specified maximum and are engaged in for the purpose of preventing or retarding a decline in the market price of the securities while the offering is in progress.

Over-allotment transactions involve sales by the underwriters of securities in excess of the number of securities the underwriters are obligated to purchase. This creates a syndicate short position, which may be either a covered short position or a naked short position. In a covered short position, the number of securities over-allotted by the underwriters is not greater than the number of securities that they may purchase in the over-allotment option. In a naked short position, the number of securities involved is greater than the number of securities in the over-allotment option. The underwriters may close out any covered short position by either exercising their over-allotment option or purchasing securities in the open market.

Syndicate covering transactions involve the purchase of securities in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of securities to close out the short position, the underwriters will consider, among other things, the price of securities available for purchase in the open market as compared to the price at which they may purchase securities through the exercise of the over-allotment option. If the underwriters sell more shares of securities than could be covered by the exercise of the over-allotment option, creating a naked short position, the position can be closed out only by buying securities in the open market. A naked short position is more likely to be created if the underwriters are concerned that after pricing there could be downward pressure on the price of the securities in the open market that could adversely affect investors who purchase in this offering.

Penalty bids permit the representative to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in stabilizing or syndicate covering transactions to cover syndicate short positions.

These stabilizing transactions, syndicate covering transactions and penalty bids may have the effect of raising or maintaining the market price of our securities or preventing or retarding a decline in the market price of our securities. As a result, the price of our securities in the open market may be higher than it would be otherwise in the absence of these transactions.

Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the prices of our securities. These transactions may occur on the Nasdaq Capital Market or on any other trading market. If any of these transactions are commenced, they may be discontinued without notice at any time.

Passive Market Making

In connection with this offering, the underwriters and any selling group members may engage in passive market making transactions in our common shares on Nasdaq in accordance with Rule 103 of Regulation M under the Exchange Act during a period before the commencement of offers or sales of common shares and/or Pre-Funded Warrants and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, that bid must then be lowered when specified purchase limits are exceeded.

Electronic Distribution

This prospectus in electronic format may be made available on websites or through other online services maintained by one or more of the underwriters, or by their affiliates. Other than this prospectus in electronic format, the information on any underwriter's website and any information contained in any other website maintained by an underwriter is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or any underwriter in its capacity as underwriter, and should not be relied upon by investors.

Other

From time to time, certain of the underwriters and/or their affiliates have provided, and may in the future provide, various investment banking and other financial services for us for which services they have received and, may in the future receive, customary fees. In the course of their businesses, the underwriters and their affiliates may actively trade our securities or loans for their own account or for the accounts of customers, and, accordingly, the underwriters and their affiliates may at any time hold long or short positions in such securities or loans. Except for services provided in connection with this offering, no underwriter has provided any investment banking or other financial services to us during the 180-day period preceding the date of this prospectus and we do not expect to retain any underwriter to perform any investment banking or other financial services for at least 90 days after the date of this prospectus.

Notice to Investors

Notice to Investors in Canada

The securities may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 Underwriting Conflicts ("NI 33-105"), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Investors in the United Kingdom

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a "Relevant Member State") an offer to the public of any securities which are the subject of the offering contemplated by this prospectus may not be made in that Relevant Member State except that an offer to the public in that Relevant Member State of any such securities may be made at any time under the following exemptions under the Prospectus Directive, if they have been implemented in that Relevant Member State:

- (a) to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;
- (b) to any legal entity which has two or more of: (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than €43,000,000; and (3) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts;
- (c) by the underwriter to fewer than 100 natural or legal persons (other than qualified investors as defined in the Prospectus Directive); or
- (d) in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of these securities shall result in a requirement for the publication by the issuer or the underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to the public" in relation to any of the securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any such securities to be offered so as to enable an investor to decide to purchase any such securities, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression "Prospectus Directive" means Directive 2003/71/EC and includes any relevant implementing measure in each Relevant Member State.

Each underwriter has represented, warranted and agreed that:

- (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000 (the FSMA)) received by it in connection with the issue or sale of any of the securities in circumstances in which section 21(1) of the FSMA does not apply to the issuer; and
- (b) it has complied with and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the securities in, from or otherwise involving the United Kingdom.

European Economic Area

In particular, this document does not constitute an approved prospectus in accordance with European Commission's Regulation on Prospectuses no. 809/2004 and no such prospectus is to be prepared and approved in connection with this offering. Accordingly, in relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (being the Directive of the European Parliament and of the Council 2003/71/EC and including any relevant implementing measure in each Relevant Member State) (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State (the Relevant Implementation Date) an offer of securities to the public may not be made in that Relevant Member State prior to the publication of a prospectus in relation to such securities which has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that it may, with effect from and including the Relevant Implementation Date, make an offer of securities to the public in that Relevant Member State at any time:

- to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;
- to any legal entity which has two or more of: (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than €43,000,000; and (3) an annual net turnover of more than €50,000,000, as shown in the last annual or consolidated accounts; or
- in any other circumstances which do not require the publication by the Issuer of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer of securities to the public" in relation to any of the securities in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the securities to be offered so as to enable an investor to decide to purchase or subscribe for the securities, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State. For these purposes the securities offered hereby are "securities."

Notice to Prospective Investors in Switzerland

Our common shares and Pre-Funded Warrants may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange ("SIX") or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to our common shares and Pre-Funded Warrants or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, our common shares and Pre-Funded Warrants have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of our common shares and Pre-Funded Warrants will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of our common shares and Pre-Funded Warrants have not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes ("CISA"). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of our common shares and Pre-Funded Warrants.

Notice to Prospective Investors in the Dubai International Financial Centre

This prospectus relates to an Exempt Offer in accordance with the Offered Securities Rules of the Dubai Financial Services Authority ("DFSA"). This prospectus is intended for distribution only to persons of a type specified in the Offered Securities Rules of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus nor taken steps to verify the information set forth herein and has no responsibility for the prospectus. The common shares and Pre-Funded Warrants to which this prospectus relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the common shares and Pre-Funded Warrants offered should conduct their own due diligence on the common shares and Pre-Funded Warrants. If you do not understand the contents of this prospectus you should consult an authorized financial advisor.

Notice to Prospective Investors in Australia

No placement document, prospectus, product disclosure statement or other disclosure document has been lodged with the Australian Securities and Investments Commission, in relation to the offering. This prospectus does not constitute a prospectus, product disclosure statement or other disclosure document under the Corporations Act 2001 (the “Corporations Act”), and does not purport to include the information required for a prospectus, product disclosure statement or other disclosure document under the Corporations Act.

Any offer in Australia of the common shares and Pre-Funded Warrants may only be made to persons (the “Exempt Investors”) who are “sophisticated investors” (within the meaning of section 708(8) of the Corporations Act), “professional investors” (within the meaning of section 708(11) of the Corporations Act) or otherwise pursuant to one or more exemptions contained in section 708 of the Corporations Act so that it is lawful to offer the common shares and Pre-Funded Warrants without disclosure to investors under Chapter 6D of the Corporations Act.

The common shares and Pre-Funded Warrants applied for by Exempt Investors in Australia must not be offered for sale in Australia in the period of 12 months after the date of allotment under the offering, except in circumstances where disclosure to investors under Chapter 6D of the Corporations Act would not be required pursuant to an exemption under section 708 of the Corporations Act or otherwise or where the offer is pursuant to a disclosure document which complies with Chapter 6D of the Corporations Act. Any person acquiring our common shares and Pre-Funded Warrants must observe such Australian on-sale restrictions.

This prospectus contains general information only and does not take account of the investment objectives, financial situation or particular needs of any particular person. It does not contain any securities recommendations or financial product advice. Before making an investment decision, investors need to consider whether the information in this prospectus is appropriate to their needs, objectives and circumstances, and, if necessary, seek expert advice on those matters.

Notice to Prospective Investors in Hong Kong

Our common shares and Pre-Funded Warrants have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a “prospectus” as defined in the Companies Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the common shares and Pre-Funded Warrants has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to our common shares and Pre-Funded Warrants which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

Notice to Prospective Investors in Japan

Our common shares and Pre-Funded Warrants have not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948, as amended) and, accordingly, will not be offered or sold, directly or indirectly, in Japan, or for the benefit of any Japanese Person or to others for re-offering or resale, directly or indirectly, in Japan or to any Japanese Person, except in compliance with all applicable laws, regulations and ministerial guidelines promulgated by relevant Japanese governmental or regulatory authorities in effect at the relevant time. For the purposes of this paragraph, “Japanese Person” shall mean any person resident in Japan, including any corporation or other entity organized under the laws of Japan.

Notice to Prospective Investors in Singapore

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of our common shares and Pre-Funded Warrants may not be circulated or distributed, nor may our common shares and Pre-Funded Warrants be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA"), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275, of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where our common shares and Pre-Funded Warrants are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- (a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- (b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired our common shares and Pre-Funded Warrants pursuant to an offer made under Section 275 of the SFA except:

- (c) to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- (d) where no consideration is or will be given for the transfer;
- (e) where the transfer is by operation of law;
- (f) as specified in Section 276(7) of the SFA; or
- (g) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

Notice to Prospective Investors in Canada

Our common shares and Pre-Funded Warrants may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of our common shares and Pre-Funded Warrants must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 (or, in the case of securities issued or guaranteed by the government of a non-Canadian jurisdiction, section 3A.4) of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

EXPENSES OF THE OFFERING

We estimate that our expenses in connection with this offering, other than underwriting discounts and commissions, will be as follows:

Expenses	Amount
U.S. Securities and Exchange Commission registration fee	\$ 2,230
FINRA filing fee	3,356
Legal fees and expenses	350,000
Accounting fees and expenses	76,545
Miscellaneous	42,869
Total	<u>\$ 475,000</u>

All amounts in the table are estimates except the U.S. Securities and Exchange Commission registration fee and the FINRA filing fee. The Company will pay all of the expenses of this offering.

LEGAL MATTERS

The validity of the common shares and the common shares issuable upon the exercise of the Pre-Funded Warrants, if any, and Common Warrants and certain other matters of Bermuda law will be passed upon for us by Conyers Dill & Pearman Limited, Bermuda. The validity of the Pre-Funded Warrants and Common Warrants and certain matters of U.S. federal and New York State law will be passed upon for us by Lowenstein Sandler LLP, New York, New York. Certain legal matters in connection with this offering will be passed upon for the underwriter by Blank Rome LLP, New York, New York.

EXPERTS

The financial statements of Altamira Therapeutics Ltd. as of December 31, 2021 and 2020, and for each of the three years in the period ended December 31, 2021, included in this prospectus, have been audited by Deloitte AG, an independent registered public accounting firm, as stated in their report. Such financial statements are included in reliance upon the report of such firm given their authority as experts in accounting and auditing.

ENFORCEMENT OF JUDGMENTS

Altamira Therapeutics Ltd. is a Bermuda exempted company. As a result, the rights of holders of our common shares will be governed by Bermuda law and our memorandum of continuation and bye-laws. The rights of shareholders under Bermuda law may differ from the rights of shareholders of companies incorporated in other jurisdictions. Many of our directors and some of the named experts referred to in this prospectus are not residents of the United States, and a substantial portion of our assets are located outside the United States. As a result, it may be difficult for investors to effect service of process on those persons in the United States or to enforce in the United States judgments obtained in U.S. courts against us or those persons based on the civil liability provisions of the U.S. securities laws. It is doubtful whether courts in Bermuda will enforce judgments obtained in other jurisdictions, including the United States, against us or our directors or officers under the securities laws of those jurisdictions or entertain actions in Bermuda against us or our directors or officers under the securities laws of other jurisdictions.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the U.S. Securities and Exchange Commission a registration statement (including amendments and exhibits to the registration statement) on Form F-1 under the Securities Act. This prospectus, which is part of the registration statement, does not contain all of the information set forth in the registration statement and the exhibits and schedules to the registration statement. For further information, we refer you to the registration statement and the exhibits and schedules filed as part of the registration statement. If a document has been filed as an exhibit to the registration statement, we refer you to the copy of the document that has been filed. Each statement in this prospectus relating to a document filed as an exhibit is qualified in all respects by the filed exhibit.

We are subject to the informational requirements of the Exchange Act. Accordingly, we are required to file reports and other information with the SEC, including annual reports on Form 20-F and reports on Form 6-K. You may inspect and copy reports and other information filed with the SEC at the Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. In addition, the SEC maintains an Internet website that contains reports and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

As a foreign private issuer, we are exempt under the Exchange Act from, among other things, the rules prescribing the furnishing and content of proxy statements, and our directors, executive officers and major shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

Index to Consolidated Financial Statements

Audited Consolidated Financial Statements — Altamira Therapeutics Ltd.

As of December 31, 2021 and 2020 and for the years ended December 31, 2021, 2020, and 2019

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of Altamira Therapeutics Ltd.

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of Altamira Therapeutics Ltd. and subsidiaries (the “Company”) as of December 31, 2021 and 2020, the related consolidated statements of profit or loss and other comprehensive income / (loss), changes in equity, and cash flows, for each of the three years in the period ended December 31, 2021, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board (“IFRS”).

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

INTANGIBLE ASSETS – CAPITALIZED DEVELOPMENT EXPENDITURE – refer to note 2 (section development expenditures), note 3 (section intangible assets – research and development), and note 9 (intangible assets) to the financial statements

Critical Audit Matter Description

The Company capitalized development expenditure for AM-125, a product candidate for the treatment of vertigo, in the amount of CHF 2,783,431 for the year ended December 31, 2021. The total carrying value of internally developed intangible assets was CHF 9,801,462 as of December 31, 2021.

We identified the Company’s accounting treatment of capitalized development expenditure as a critical audit matter. This required a high degree of auditor judgment and an increased extent of effort when performing audit procedures to evaluate the reasonableness of management’s judgments of technical feasibility, intention and ability to complete the development of AM-125 and to generate future economic profits from the intangible asset.

How the Critical Audit Matter Was Addressed in the Audit

We performed the following audit procedures amongst others, to address this critical audit matter:

- We assessed, with the assistance of our IFRS specialist, whether the Company’s accounting policy and treatment is in line with IFRS and the underlying nature of the development of AM-125;
- We evaluated whether the technical feasibility criteria is met through assessment of the nature of the development approach of AM-125 and the results from ongoing studies;
- We evaluated new or contradictory evidence that would affect the intention and ability to complete the development of AM-125 or to generate profits in the future, including review of minutes of meetings of the board of directors and inquiries with management and project managers throughout the year, and;
- We tested a sample of capitalized research and development costs to evaluate if they fulfil the criteria of being directly attributable to the development of AM-125 and evaluate whether amounts agree to supporting documentation and the confirmations received from clinical research organisations (CRO) to determine whether only costs related to the development of AM-125 are capitalized.

Deloitte AG

/s/ Roland Mueller

/s/ Adrian Kaeppli

Auditor in Charge

Zurich, Switzerland
April 12, 2022

We have served as the Company’s auditor since 2014.

Consolidated Statement of Profit or Loss and Other Comprehensive Income/(Loss)

For the Years Ended December 31, 2021, 2020 and 2019

(in CHF)

	Note	2021	2020	2019
Revenue		63,882	—	—
Cost of Sales	19	(2,240,554)	—	—
Gross profit		(2,176,672)	—	—
Other operating income	18	460,710	174,475	—
Research and development	20	(8,939,037)	(2,862,979)	(3,325,281)
Sales and marketing	21	(1,498,218)	—	—
General and administrative	22	(4,946,576)	(2,594,662)	(3,933,863)
Operating loss		(17,099,793)	(5,283,166)	(7,259,144)
Interest income	24	3,219	258	17,882
Interest expense	24	(189,695)	(135,151)	(28,628)
Foreign currency exchange gain/(loss), net	24	328,641	(333,553)	(219,573)
Revaluation gain/(loss) from derivative financial instruments	24 29, 30	(410,918)	(2,250,222)	663,725
Transaction costs	24	—	(219,615)	—
Loss before tax		(17,368,546)	(8,221,449)	(6,825,738)
Income tax gain/(loss)	25	(21,620)	21,284	193,837
Net loss attributable to owners of the Company		(17,390,166)	(8,200,165)	(6,631,901)
Other comprehensive income/(loss):				
Items that will never be reclassified to profit or loss				
Remeasurements of defined benefit liability, net of taxes of CHF 0	23	264,984	(26,118)	(72,010)
Items that are or may be reclassified to profit or loss				
Foreign currency translation differences, net of taxes of CHF 0		772	88,862	16,446
Other comprehensive income/(loss), net of taxes of CHF 0		265,756	62,744	(55,564)
Total comprehensive loss attributable to owners of the Company		(17,124,410)	(8,137,421)	(6,687,465)
Basic and diluted loss per share	26	(1.31)	(1.36)	(2.28)

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statement of Financial Position

As of December 31, 2021 and 2020

(in CHF)

	Note	December 31, 2021	December 31, 2020
ASSETS			
Non-current assets			
Property and equipment	7	1	46,636
Right-of-use assets	8	564,714	—
Intangible assets	9	14,314,877	9,115,410
Other non-current financial assets		199,105	20,001
Total non-current assets		15,078,697	9,182,047
Current assets			
Inventories	10	839,221	—
Trade receivables		21,746	—
Other receivables	11	917,833	80,861
Prepayments	12	996,910	277,589
Cash and cash equivalents	13	984,191	11,258,870
Total current assets		3,759,901	11,617,320
Total assets		18,838,598	20,799,367
EQUITY AND LIABILITIES			
Equity			
Share capital	14	149,643	114,172
Share premium		188,511,476	177,230,300
Foreign currency translation reserve		62,069	61,297
Accumulated deficit		(176,018,660)	(160,635,879)
Total shareholders' (deficit)/equity attributable to owners of the Company		12,704,528	16,769,890
Non-current liabilities			
Derivative financial instruments	5	1,233	6,318
Non-current lease liabilities	8	461,485	—
Employee benefit liability	23	668,319	867,376
Deferred tax liabilities	25	142,484	125,865
Total non-current liabilities		1,273,521	999,559
Current liabilities			
Loan	29	—	523,920
Derivative financial instruments	29	—	310,439
Current lease liabilities	8	114,251	—
Trade and other payables	16	3,697,723	762,453
Accrued expenses	17	1,048,575	1,433,106
Total current liabilities		4,860,549	3,029,918
Total liabilities		6,134,070	4,029,477
Total equity and liabilities		18,838,598	20,799,367

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statement of Changes in Equity

As of December 31, 2021, 2020 and 2019

(in CHF)

	Note	Share Capital	Share Premium	Foreign Currency Translation Reserve	Accumulated Deficit	Total Equity / (Deficit)
As of January 1, 2019		710,336	149,286,723	(44,011)	(146,303,398)	3,649,650
Total comprehensive loss						
Net loss		—	—	—	(6,631,901)	(6,631,901)
Other comprehensive income / (loss)		—	—	16,446	(72,010)	(55,564)
Total comprehensive loss		—	—	16,446	(6,703,911)	(6,687,465)
Transactions with owners of the Company						
Capital increase / Exercise of warrants		940,044	8,853,599	—	—	9,793,643
Transaction costs		—	(948,615)	—	—	(948,615)
Share based payments	15	—	—	—	228,920	228,920
Balance at December 31, 2019		1,650,380	157,191,707	(27,565)	(152,778,389)	6,036,133
As of January 1, 2020		1,650,380	157,191,707	(27,565)	(152,778,389)	6,036,133
Total comprehensive loss						
Net loss		—	—	—	(8,200,165)	(8,200,165)
Other comprehensive income / (loss)		—	—	88,862	(26,118)	62,744
Total comprehensive loss		—	—	88,862	(8,226,283)	(8,137,421)
Transactions with owners of the Company						
Reduction par value		(1,973,044)	1,973,044	—	—	—
Capital increase / Exercise of warrants		429,466	15,645,530	—	—	16,074,996
Transaction costs		—	(636,858)	—	—	(636,858)
Conversion of loan		7,370	3,056,877	—	—	3,064,247
Share based payments	15	—	—	—	368,793	368,793
Balance at December 31, 2020		114,172	177,230,300	61,297	(160,635,879)	16,769,890
As of January 1, 2021		114,172	177,230,300	61,297	(160,635,879)	16,769,890
Total comprehensive loss						
Net loss		—	—	—	(17,390,166)	(17,390,166)
Other comprehensive income / (loss)		—	—	772	264,984	265,756
Total comprehensive loss		—	—	772	(17,125,182)	(17,124,410)
Transactions with owners of the Company						
Capital increase / Exercise of warrants		20,822	7,083,869	—	—	7,104,691
Transaction costs		—	(156,817)	—	—	(156,817)
Conversion of loan		5,168	1,366,087	—	—	1,371,255
Share based/Asset purchase		7,735	2,447,081	—	1,078,800	3,533,616
Share based payments	15	1,746	540,956	—	663,601	1,206,303
Balance at December 31, 2021		149,643	188,511,476	62,069	(176,018,660)	12,704,528

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated Statement of Cash Flows
For the Years Ended December 31, 2021, 2020, and 2019
(in CHF)

	<u>Note</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>
Cash flows from operating activities				
Net loss		(17,390,166)	(8,200,165)	(6,631,901)
Adjustments for:				
Depreciation	7, 8, 20, 22	76,357	20,036	30,823
Impairment of intangible assets	9, 20	1,529,929	—	—
Unrealized foreign currency exchange loss, net		(279,329)	10,818	21,290
Net interest expense	24	174,593	127,160	1,205
Share based payments	15	1,206,303	368,793	226,601
Transaction costs	24	—	219,615	—
Employee benefits		65,927	80,811	40,150
Revaluation loss/(gain) derivative financial instruments	24, 29, 30	410,918	2,250,222	(663,725)
Income tax loss/(gain)	25	21,620	(21,284)	(193,837)
		(14,183,848)	(5,143,994)	(7,169,394)
Changes in:				
Inventories		(839,221)	—	—
Trade and other receivables		(586,612)	254,438	(18,925)
Prepayments		(719,321)	156,661	(82,948)
Trade and other payables		2,937,019	(175,878)	(898,088)
Accrued expenses		(280,755)	65,303	(224,077)
Net cash used in operating activities		(13,672,738)	(4,843,470)	(8,393,432)
Cash flows from investing activities				
Purchase of property and equipment	7	—	—	(63,600)
Purchase of intangibles	9	(3,325,952)	(2,315,232)	(2,955,036)
Cash paid for other non-current financial assets		(179,104)	—	—
Interest received	24	—	258	17,882
Net cash used in investing activities		(3,505,056)	(2,314,974)	(3,000,754)
Cash flows from financing activities				
Proceeds from offerings and warrant exercises	14, 30	6,842,940	16,074,996	9,793,643
Transaction costs	14	(156,817)	(636,858)	(948,615)
Proceeds from loans	29	—	1,522,931	—
Repayment of loan		(50,000)	—	(1,463,328)
Repayment of lease liabilities		(18,700)	-	-
Interest paid	8, 24, 29	(3,699)	—	(3,745)
Net cash from financing activities		6,613,724	16,961,069	7,377,955
Net increase / (decrease) in cash and cash equivalents		(10,564,070)	9,802,625	(4,016,231)
Cash and cash equivalents at beginning of the period		11,258,870	1,384,720	5,393,207
Net effect of currency translation on cash		289,391	71,525	7,744
Cash and cash equivalents at end of the period		984,191	11,258,870	1,384,720

The accompanying notes form an integral part of these consolidated financial statements.

1. Reporting entity

Altamira Therapeutics Ltd. (formerly Auris Medical Holding Ltd.) (the “Company”) is an exempted company incorporated in Bermuda and is subject to Bermuda law. The Company’s registered address is Clarendon House, 2 Church Street, Hamilton HM11, Bermuda. These consolidated financial statements comprise the Company and its subsidiaries (together referred to as the “Group” and individually as “Group entities”). The Company is the ultimate parent of the following Group entities:

- Auris Medical AG, Basel, Switzerland (100%) with a nominal share capital of CHF 2,500,000
- Otolanum AG, Zug, Switzerland (100%) with a nominal share capital of CHF 100,000
- Zilentin AG, Zug, Switzerland (100%), with a nominal share capital of CHF 100,000
- Altamira Medica AG, Zug, Switzerland (100%), with a nominal share capital of CHF 3,000,000
- Altamira Therapeutics, Inc., Dover, Delaware, United States (100%) with a nominal share capital of USD 100
- Auris Medical Ltd., Dublin, Ireland (100%) with a nominal share capital of EUR 100
- Auris Medical Pty Ltd, Collingwood, Australia (100%), with a nominal share capital of AUD 100

On March 13, 2018, the former Auris Medical Holding Ltd. merged (the “Merger”) into Auris Medical NewCo Holding AG (“Auris NewCo”), a newly incorporated, wholly-owned Swiss subsidiary following shareholder approval at an extraordinary general meeting of shareholders held on March 12, 2018. Following the Merger, Auris NewCo, the surviving company, had a share capital of CHF 122,347.76, divided into 6,117,388 (pre-2019 Reverse Share Split) common shares with a nominal value of CHF 0.02 (pre-2019 Reverse Share Split) each. Pursuant to the Merger, the Company’s shareholders received one common share with a nominal value of CHF 0.02 (pre-2019 Reverse Share Split) of Auris NewCo for every 10 of the Company’s common shares held prior to the Merger, effectively resulting in a “reverse stock split” at a ratio of 10-for-1. Auris NewCo changed its name to “Auris Medical Holding AG” following consummation of the Merger. Following shareholder approval at an extraordinary general meeting of shareholders held on March 8, 2019 and upon the issuance of a certificate of continuance by the Registrar of Companies in Bermuda on March 18, 2019, the Company discontinued as a Swiss company and, pursuant to Article 163 of the Swiss Federal Act on Private International Law and pursuant to Section 132C of the Companies Act 1981 of Bermuda (the “Companies Act”), continued existence under the Companies Act as a Bermuda company with the name “Auris Medical Holding Ltd.” (the “Redomestication”). The common shares of Auris Medical Holding Ltd. traded on the Nasdaq Capital Market under the trading symbol “EARS.” On July 21, 2021, the Company changed its name to Altamira Therapeutics Ltd. Since July 26, 2021, the Company’s common shares are traded under the trading symbol “CYTO”.

The Company is primarily involved in the development of therapeutics that address important unmet medical needs. The Company is currently active in three areas: the development of RNA therapeutics for delivery to extrahepatic targets (with AM-401 targeting KRAS driven cancers as first project, preclinical stage), the development of intranasal betahistine for the treatment of vertigo (AM-125, in Phase 2). Through its affiliate Altamira Medica, the Company is commercializing a nasal spray for protection against airborne viruses and allergens (AM-301).

2. Basis of preparation

Statement of compliance

These consolidated financial statements have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board (“IFRS”).

These consolidated financial statements were approved by the Board of Directors and the Audit Committee of the Company on April 7, 2022.

Basis of measurement

The consolidated financial statements are prepared on the historical cost basis, except for the revaluation to fair value of certain financial liabilities. Historical cost is generally based on the fair value of the consideration given in exchange for goods and services. The principal accounting policies adopted are set out below.

In addition, for financial reporting purposes, fair value measurements are categorized into Level 1, 2 or 3 based on the degree to which the inputs to the fair value measurements are observable and the significance of the inputs to the fair value measurement in its entirety, which are described as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date
- Level 2 inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly; and
- Level 3 inputs are unobservable inputs for the asset or liability.

Functional and reporting currency

These consolidated financial statements are presented in Swiss Francs (“CHF”), which is the Company’s functional (“functional currency”) and the Group’s reporting currency.

Redomestication

The Redomestication of the Company from Switzerland to Bermuda is a continuance of its business. Therefore, the consolidated financial statements present the operation of Auris Medical Holding AG for the time before the Redomestication and of Auris Medical Holding Ltd for the time following the Redomestication.

2019 Reverse Share Split

The Company effected the 2019 Reverse Share Split of its common shares at a ratio of 1-for-20. No fractional common shares were issued as fractional common shares were settled in cash. Impacted amounts and share information included in the consolidated financial statements and notes thereto have been adjusted for the reverse share split as if such reverse share split occurred on the first day of the periods presented. Certain amounts in the notes to the consolidated financial statements may be slightly different than previously reported due to rounding of fractional shares as a result of the reverse share split.

Use of estimates and judgments

The preparation of financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions of accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

Information about judgments made in applying accounting policies that have the most significant effects on the amounts recognized in the consolidated financial statements are described below.

Income taxes

As disclosed in Note 25 the Group has significant tax losses in Switzerland. These tax losses represent potential value to the Group to the extent that the Group is able to create taxable profits in Switzerland prior to expiry of such losses. Tax losses may be used within 7 years from the year the losses arose.

The Group also has tax losses in the United States which may be used within 20 years of the end of the year in which losses arose, or for a shorter time period in accordance with prevailing state law.

Other than a tax asset in the amount of CHF 31,879 (31.12.2020: CHF 476,363), the Group has not recorded any deferred tax assets in relation to these tax losses. Deferred tax assets on tax losses were only considered to the extent that they offset taxable temporary differences within the same entity. The key factors which have influenced management in arriving at this evaluation are the fact that the business is still in a development phase and the Group has not yet a history of making profits. Should management's assessment of the likelihood of future taxable profits change, a deferred tax asset will be recorded. Income tax loss reflects the reassessment of deferred tax assets and liabilities booked in the 2021 fiscal year.

Development expenditures

The project stage forms the basis for the decision as to whether costs incurred for the Group's development projects can be capitalized. We do not capitalize clinical development expenditures until the Group obtains regulatory approval (i.e. approval to commercially use the product), as this is considered to be essentially the first point in time where it becomes probable that future revenues can be generated. For the Group's intranasal betahistine program for the treatment of vertigo (AM-125), however, the development is primarily focused on the delivery route and formulation and not the drug itself (already an approved generic) and aims to demonstrate higher bioavailability through intranasal delivery. Given the nature of the development approach and the fact that there is an existing market in which oral betahistine for the treatment of vertigo has been approved, direct development expenditures have been capitalized.

As of each reporting date, the Group estimates the level of service performed by the vendors and the associated costs incurred for the services performed. As part of the process of preparing the Group's financial statements, the Group is required to estimate its accrued expenses. This process involves reviewing contracts, identifying services that have been performed on the Group's behalf and estimating the level of service performed and the associated cost incurred for the service when it has not yet been invoiced or otherwise notified of the actual cost.

Employee benefits

The Group maintains a pension plan for all employees in Switzerland through payments to a legally independent collective foundation. This pension plan qualifies under IFRS as defined benefit pension plan.

The Group's net obligation in respect of defined benefit plans is calculated by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods, discounting that amount and deducting the fair value of any plan assets. The Company makes relevant actuarial assumptions with regard to the discount rate, future salary increases and life expectancy.

Research and Development and Accrued Expenses

The Company records the costs associated with research, nonclinical and clinical trials, and manufacturing process development as incurred. These costs are a significant component of the Company's research and development expenses, with a substantial portion of the Company's on-going research and development activities being conducted by third party service providers, including contract research and manufacturing organizations.

The Company accrues for expenses resulting from obligations under agreements with contract research organizations ("CROs"), contract manufacturing organizations ("CMOs"), and other outside service providers for which payment flows do not match the periods over which materials or services are provided to the Company. Accrued expenses are recorded based on estimates of services received and efforts expended pursuant to agreements established with CROs, CMOs, and other outside service providers. These estimates are typically based on contracted amounts applied to the proportion of work performed and determined through analysis with internal personnel and external service providers as to the progress or stage of completion of the services. The Company makes significant judgments and estimates in determining the accrued expense balance in each reporting period. In the event advance payments are made to a CRO, CMO, or outside service provider, the payments will be recorded as prepayments which will be expensed as the contracted services are performed. Inputs, such as the services performed, the number of patients enrolled, or the trial duration, may vary from the Company's estimates. As actual costs become known, the Company adjusts its prepayments and accrued expenses.

3. Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these consolidated financial statements, unless otherwise indicated.

Basis of consolidation

Subsidiaries

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

Transactions eliminated on consolidation

All inter-company balances, transactions and unrealized gains on transactions have been eliminated in consolidation. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred.

Segment reporting

A segment is a distinguishable component of the Group that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Group's other components.

The Chief Executive Officer is determined to be the Group's Chief Operating Decision Maker ("CODM"). The CODM assesses the performance and allocates the resources of the Group as a whole, as all of the Group's activities are focusing on the development of therapeutics for the treatment and prevention of ear, nose, throat and related disorders. Financial information is only available for the Group as a whole. Therefore, management considers there is only one operating segment under the requirements of IFRS 8, Operating Segments.

Foreign currency

Foreign currency transactions

Items included in the financial statements of Group entities are measured using the currency of the primary economic environment in which the entity operates. Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in profit or loss. Non-monetary items that are measured based on historical cost in a foreign currency are not re-translated.

Foreign operations

Assets and liabilities of Group entities whose functional currency is other than CHF are included in the consolidation by translating the assets and liabilities into the reporting currency at the exchange rates applicable at the end of the reporting period. Income and expenses are translated at average exchange rates (unless this average is not a reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in which case income and expenses are translated at the dates of the transaction).

These foreign currency translation differences are recognized in Other Comprehensive income/(loss) and presented in the foreign currency translation reserve in equity. When a foreign operation is disposed of such that control is lost, the cumulative amount in the translation reserve related to that foreign operation is reclassified to profit or loss as part of the gain or loss on disposal.

Closing rates for the most significant foreign currencies relative to CHF:

Currency		Geographical area	Reporting entities	December 31, 2021	December 31, 2020	December 31, 2019
CHF	Swiss Franc	Switzerland	5	1.0000	1.0000	1.0000
USD	Dollar	United States	1	0.9110	0.8840	0.9674
EUR	Euro	Europe	1	1.0361	1.0817	1.0855
AUD	Dollar	Australia	1	0.6620	0.6822	—

Average exchange rates for the year for the most significant foreign currencies relative to CHF:

Currency		Geographical area	Reporting entities	2021	2020	2019
CHF	Swiss Franc	Switzerland	5	1.0000	1.0000	1.0000
USD	Dollar	United States	1	0.9142	0.9581	0.9938
EUR	Euro	Europe	1	1.0810	1.0825	1.1128
AUD	Dollar	Australia	1	0.6866	0.6546	—

Property and equipment

Property and equipment is measured at historical costs less accumulated depreciation and any accumulated impairment losses. Historical costs include expenditures that are directly attributable to the acquisition of the items. When parts of an item of tangible assets have different useful lives, they are accounted for as separate tangible asset items (major components). Depreciation is calculated on a straight-line basis over the expected useful life of the individual asset. The applicable estimated useful lives are as follows:

Production equipment	5 years
Office furniture and electronic data processing equipment (“EDP”)	3 years

Subsequent costs are included in the asset’s carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. All other repairs and maintenance are charged to profit or loss during the financial period in which they are incurred.

Depreciation methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate. When an asset is reviewed for impairment, the asset’s carrying amount may be written down immediately to its recoverable amount, provided the asset’s carrying amount is greater than its estimated recoverable amount. Management assesses the recoverable amount by assessing the higher of its fair value less costs to sell or its value in use.

Cost and accumulated depreciation related to assets retired or otherwise disposed are removed from the accounts at the time of retirement or disposal and any resulting gain or loss is included in profit or loss in the period of disposition.

Intangible assets

Research and development

Expenditures on the Group's research programs are not capitalized, they are expensed when incurred.

Expenditures on the Group's development programs are generally not capitalized except if development costs can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable, and the Group intends to and has sufficient resources to complete development and to use or sell the asset. For the development projects of the Group, these criteria are generally only met when regulatory approval for commercialization is obtained. For the AM-125 program for the treatment of vertigo it is the Group's assessment that the criteria mentioned above are met and therefore direct development expenditures have been capitalized for AM-125 in 2019, 2020 and 2021. Intellectual property-related costs for patents are part of the expenditure for research and development projects. Therefore, the costs for the prosecution and registration of patents are expensed when incurred as long as the research and development project concerned does not meet the criteria for capitalization. In case of AM-125, where in 2019 a US patent was issued and a related EU application was allowed, prosecution and registration costs have been capitalized as the criteria have been met.

Licenses, intellectual property and data rights

Intellectual property rights that are acquired by the Group are capitalized as intangible assets if they are controlled by the Group, are separately identifiable and are expected to generate future economic benefits, even if uncertainty exists as to whether the research and development will ultimately result in a marketable product. Consequently, upfront and milestone payments to third parties for the exclusive use of pharmaceutical compounds in specified areas of treatment are recognized as intangible assets.

Measurement

Intangible assets acquired that have finite useful lives are measured at cost less accumulated amortization and any accumulated impairment losses.

Subsequent expenditure

Subsequent expenditure is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditure, including expenditure on internally generated goodwill and brands, is recognized in profit or loss as incurred.

Amortization

All licenses of the Group have finite lives. Amortization will commence once the Group's intangible assets are available for use which will be the case after regulatory approvals are obtained and the related products are available for use. Amortization of licenses is calculated on a straight-line basis over the period of the expected benefit or until the license expires, whichever is shorter. The estimated useful life is 10 years or the remaining term of patent protection. The Group assesses at each statement of financial position date whether intangible assets which are not yet ready for use are impaired.

Impairment of non-financial assets

Property and equipment and intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. For the purpose of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units). An impairment loss is recognized as the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell or value in use. Impairment losses are recognized in profit or loss. Assets that were previously impaired are reviewed for possible reversal of the impairment at each reporting date. Any increase in the carrying amount of an asset will be based on the depreciated historical costs had the initial impairment not been recognized.

Asset purchase

On June 1, 2021, we acquired 100% of the share capital of privately held Trasir Therapeutics Inc. (“Trasir”) through the merger of our subsidiary Auris Medical Inc. with and into Trasir (the “Merger”), with Trasir surviving the merger as the surviving entity. Trasir was subsequently renamed Altamira Therapeutics, Inc. and redomiciled in Dover, Delaware. Founded in 2014, Trasir has been a pioneer in the development of nanoparticles for extrahepatic oligonucleotide delivery.

The purchase price for Trasir comprised: (i) 764,370 non-registered common shares of the Company, par value CHF 0.01 per share, calculated based on a value of USD 2,500,000 divided by the average closing price of the Common Shares on the 15 trading days preceding the closing date (the “Reference Price”, which amounted to USD 3.27 per Common Share); (ii) contingent on the occurrence of positive results from a subsequent post-closing scientific study led by Trasir (“Positive Results”), USD 1,500,000 of common shares of the Company to be calculated based on the average closing price of the common shares on the 15 trading days preceding the occurrence of Positive Results; and (iii) USD 210,000 for expenses incurred by certain selling Trasir shareholders paid in USD 180,000 in cash and 9,173 non-registered common shares based on the Reference Price.

Trasir’s main asset is an exclusive license agreement (the “License Agreement”) with Washington University located in St. Louis, Missouri (“WU”). Pursuant to the License Agreement, WU granted Trasir an exclusive, worldwide, royalty-bearing license (with the right to sublicense) during the term of the License Agreement under certain patent rights owned or controlled by WU to research, develop, make, have made, sell, offer for sale, use and import pharmaceutical products covered under such patent rights for all fields of use. Such licensed products may include “silencing RNA” (siRNAs) pharmaceutical preparations formulated in combination with Trasir’s proprietary delivery technologies. In consideration for such worldwide, exclusive license, the Company (through its acquisition of Trasir, described above) will be obligated to pay WU: annual license maintenance fees in the low five figures through first commercial sale; pre-clinical and clinical regulatory milestones; sales milestones; and a low single digit royalty based on annual net sales of licensed products worldwide for at least the applicable patent term or period of marketing exclusivity, whichever is longer, but in no case less than a minimum royalty term of 12 years; and a percentage share (in the double digits) of sublicensing revenues received by the Company in connection with licensed products. Such regulatory and sales milestones may total up to an aggregate of USD 4,375,000. In the event the Company fails to meet certain regulatory diligence milestones, WU will have the right to terminate the license.

The acquisition of Trasir was treated as an asset acquisition because substantially all the fair value is concentrated in a single identifiable asset, the License Agreement with WU. The acquisition of the license is settled to a large extent in exchange for a variable number of the Company’s publicly listed shares. IFRS 2 “Share-based payments” was applied. With regards to the contingent part of the purchase price as mentioned under (ii) above, a downward adjustment of CHF 269,700 to the estimated fair value was made to reflect the possibility of not meeting the condition of Positive Results. As of December 31, 2021, the total carrying amount of the license acquired amounted to CHF 3,893,681, including directly attributable transaction costs of CHF 198,246.

Leases

The Group assesses at contract inception whether a contract is, or contains, a lease. That is, if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The Group applies a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. The Group recognizes lease liabilities to make lease payments and right-of-use assets representing the right to use the underlying assets.

Right-of-use assets

The Group recognizes right-of-use assets at the commencement date of the lease. Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any remeasurements of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognized, initial direct costs incurred, and lease payments made at or before the commencement date. Unless the Group is reasonably certain to obtain ownership of the leased asset at the end of the lease term, the recognized right-of-use assets are depreciated on a straight-line basis over the shorter of its estimated useful life and the lease term. Right-of-use assets are subject to impairment.

Lease liabilities

At the commencement date of the lease, the Group recognizes lease liabilities measured at the present value of lease payments to be made over the lease term. The lease payments include fixed payments less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating a lease, if the lease term reflects the Group exercising the option to terminate. The variable lease payments that do not depend on an index or a rate are recognized as expense in the period during which the event or condition that triggers the payment occurs. In calculating the present value of lease payments, the Group uses the incremental borrowing rate at the lease commencement date if the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is increased to reflect the accumulation of interest and reduced by the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in the lease term, a change in the in-substance fixed lease payments or a change in the assessment to purchase the underlying asset.

Short-term leases and leases of low-value assets

The Group applies the short-term lease recognition exemption to its short-term leases. It also applies the lease of low-value assets recognition exemption to leases that are considered of low value (i.e. below CHF 5,000). Lease payments on short-term leases and leases of low-value assets are recognized as expense over the lease term.

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost comprises direct materials and, where applicable, direct labor costs and those overheads that have been incurred in bringing the inventories to their present location and condition. Cost is calculated using the first-in, first-out method. Net realizable value represents the estimated selling price less all estimated costs of completion and costs to be incurred in marketing, selling and distribution.

Financial instruments

The Group classifies its financial assets in the following categories: loans and receivables based on the expected loss model. The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition.

Recognition and derecognition of non-derivative financial assets and liabilities

The Group initially recognizes loans and receivables and debt securities issued on the date when they are originated. All other financial assets and financial liabilities are initially recognized on the trade date.

The Group derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred, or it neither transfers nor retains substantially all of the risks and rewards of ownership and does not retain control over the transferred asset. Any interest in such derecognized financial assets that is created or retained by the Group is recognized as a separate asset or liability.

The Group derecognizes a financial liability when its contractual obligations are discharged, cancelled, or expired.

Financial assets and financial liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group has a legal right to offset the amounts and intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

Non-derivative financial assets and liabilities—measurement

Loans and receivable

These are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. Loans and receivables are initially recognized at fair value plus any directly attributable transaction costs. Subsequent to initial recognition, they are measured at amortized cost using the effective interest method, less expected losses.

Cash and cash equivalents

The Group considers all short-term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value with original maturities of three months or less at the date of the purchase to be cash equivalents.

Non-derivative financial liabilities—measurement

Non-derivative financial liabilities are initially recognized at fair value less any directly attributable transaction costs. Subsequent to initial recognition, these liabilities are measured at amortized cost using the effective interest method.

Convertible loans

In a convertible loan classified as a hybrid contract containing a host and a separated embedded derivative, both classified as liability, the carrying amount of the host contract at initial recognition is the difference between the carrying amount of the hybrid contract and the fair value of the embedded derivative. Transaction costs that relate to the issue of the convertible loan are allocated to the host and embedded derivative in proportion to the allocation of the gross proceeds. Transaction costs relating to the embedded derivative are immediately recognized in profit and loss. Transaction costs relating to the host contract are included in the carrying amount of the liability. The host contract is then subsequently measured at amortized cost, using the effective interest method.

Share capital

All shares of the Company are registered shares and classified as part of shareholders' equity. Incremental costs directly attributable to the issue of the Company's shares, net of any tax effects, are recognized as a deduction from equity. The warrants are classified as a financial liability at fair value through profit or loss and the cost allocated to the liability component will be immediately expensed to the income statement.

The Company has not paid any dividends since its inception and does not anticipate paying dividends in the foreseeable future.

Repurchase and reissue of ordinary shares (treasury shares)

When shares recognized as equity are repurchased, the amount of the consideration paid, which includes directly attributable costs, net of any tax effects, is recognized as a deduction from equity. Repurchased shares are classified as treasury shares and are presented in the treasury share reserve. When treasury shares are sold or reissued subsequently, the amount received is recognized as an increase in equity and the resulting surplus or deficit (calculated as the difference between initial cost and fair value) on the transaction is presented within share premium.

Impairment of non-derivative financial assets

Financial assets are assessed at each reporting date to determine whether there is objective evidence of impairment.

Objective evidence that financial assets are impaired includes:

- default or delinquency by a debtor;
- indications that a debtor or issuer will enter bankruptcy;
- adverse changes in the payment status of borrowers or issuers;
- the disappearance of an active market for a security; or
- observable data indicating that there is measurable decrease in expected cash flows from a group of financial assets.

Financial assets measured at amortized cost

The Group considers evidence of impairment for these assets at an individual asset level. An impairment loss is calculated as the difference between an asset's carrying amount and the present value of the estimated future cash flows discounted at the asset's original effective interest rate. Losses are recognized in profit or loss and reflected in an allowance account. When the Group considers that there are no realistic prospects of recovery of the asset, the relevant amounts are written off. If the amount of impairment loss subsequently decreases and the decrease can be related objectively to an event occurring after the impairment was recognized, then the previously recognized impairment loss is reversed through profit or loss.

Derivative Financial Instruments

Derivative financial instruments (assets) are accounted as the cost to obtain the rights from a third party to issue shares under the purchase agreement and changes in fair value are shown as profit or loss. The fair value calculation of the derivative financial instrument (asset) is adjusted on the utilization of the asset based on total dollar amount of the purchase agreement.

Derivative financial instruments (liabilities) are accounted at fair value and changes in fair value are shown as profit or loss. The fair value calculation of the derivative financial instruments is based on the Black-Scholes option pricing model. Assumptions are made for volatility and the risk-free rate in order to estimate the fair value of the instrument. Transaction cost related to derivative financial instruments are recorded through profit and loss.

Embedded Derivatives

Derivatives may be embedded in another contractual arrangement. The Group accounts for an embedded derivative separately from the host contract when:

- The host contract is not an asset in the scope of IFRS 9
- The host contract is not itself carried at fair value through profit and loss (FVPL)
- The terms of the Embedded Derivative would meet the definition of a derivative if they were contained in a separate contract
- The economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host

The separated embedded derivatives were measured at fair value by an independent consultant applying a simulation-based valuation approach. Assumptions are made for volatility, risk free rate and other features of the instrument. All changes in the fair value of embedded derivatives were recognized in profit and loss.

Income tax

Income tax expense comprises current and deferred tax. It is recognized in profit or loss except to the extent that it relates to a business combination, or items recognized directly in equity or in Other Comprehensive Income.

Current tax

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to tax payable or receivable in respect of previous years. It is measured using tax rates enacted or substantively enacted at the reporting date.

Deferred tax

Deferred income tax is recognized, using the balance sheet liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. Deferred tax is not recognized for:

- temporary differences on the initial recognition of assets or liabilities in a transaction that is not a business combination and that affects neither accounting nor taxable profit or loss;
- temporary differences related to investments in subsidiaries to the extent that the Group is able to control the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future; and
- taxable temporary differences arising on the initial recognition of goodwill.

Deferred income tax is determined using tax rates and laws that have been enacted or substantively enacted by the reporting date and are expected to apply when the related deferred income tax asset is realized or the deferred income tax liability is settled.

Deferred income tax assets are recognized to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilized. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off tax assets against tax liabilities and when they relate to income taxes levied by the same taxation authority and the Group intends to settle its tax assets and liabilities on a net basis.

Employee benefits

The Group maintains a pension plan for all employees in Switzerland through payments to a legally independent collective foundation. This pension plan qualifies under IFRS as defined benefit pension plan. There are no pension plans for the subsidiaries in Ireland, Australia and the United States.

The Group's net obligation in respect of defined benefit plans is calculated by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods, discounting that amount and deducting the fair value of any plan assets.

The recognized asset is limited to the present value of economic benefits available in the form of any future refunds from the plan or reductions in future contributions to the plan. In order to calculate the present value of economic benefits, consideration is given to any minimum funding requirements.

Remeasurements of the net defined benefit liability, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognized immediately in Other Comprehensive Income. Past service costs, including curtailment gains or losses, are recognized immediately in general and administrative expenses within the operating results. Settlement gains or losses are recognized in general and administrative expenses within the operating results. The Group determines the net interest expense (income) on the net defined benefit liability (asset) for the period by applying the discount rate used to measure the defined benefit obligation at the beginning of the annual period or in case of any significant events between measurement dates to the then-net defined benefit liability (asset), taking into account any changes in the net defined benefit liability (asset) during the period as a result of contributions and benefit payments. Net interest expense and other expenses related to defined benefit plans are recognized in profit or loss.

Share-based compensation

The Company maintains a share-based payment plan in the form of a stock option plan for its employees, members of the Board of Directors as well as key service providers. Stock options are granted at the Board's discretion without any contractual or recurring obligations.

The share-based compensation plans qualify as equity settled plans. The grant-date fair value of share-based payment awards granted to employees is recognized as an expense, with a corresponding increase in equity, over the period that the employees become unconditionally entitled to the awards. Under the Auris Medical Holding Ltd. Long Term Equity Incentive Plan (the "Equity Incentive Plan" or "EIP"), 50% of granted share options granted to employees vest after a period of service of two years from the grant date and the remaining 50% vest after a period of service of three years from the grant date. Share options granted to members of the Board of Directors granted from 2016 onwards vest after a period of one year after the grant date.

The amount recognized as an expense is adjusted to reflect the number of awards for which the related service and non-market performance conditions are expected to be met, such that the amount ultimately recognized as an expense is based on the number of awards that meet the related service and non-market performance conditions at the vesting date. Share-based payments that are not subject to any further conditions are expensed immediately at grant date. In the year the options are exercised the proceeds received net of any directly attributable transaction costs are credited to share capital (par value) and share premium.

Valuation of share options

Option pricing and values are determined based on the Black Scholes option pricing model and assumptions are made for inputs such as volatility of the Company's stock and the risk-free rate.

Provisions

Provisions are recognized when the Group has a present obligation (legal or constructive) as a result of a past event, where it is more likely than not that an outflow of resources will be required to settle the obligation, and where a reliable estimate can be made of the amount of the obligation. Provisions are not recognized for future operating losses. Provisions are measured at the present value of the expenditures expected to be required to settle the obligation using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability.

Revenue recognition

Revenue from contracts with customers is recognized at an amount that reflects the consideration to which the Company expects to be entitled in exchange for transferring goods or services to a customer. Revenue from the sale of products is recognized at the point in time when the customer obtains control of those products which is generally upon delivery at the customer. Revenue is net of value-added tax, rebates, discounts and returns.

Government grants

Government grants are not recognized until there is reasonable assurance that the Group will comply with the conditions attaching to them and that the grants will be received. Government grants are recognized in profit or loss on a systematic basis over the periods in which the Company recognizes as expenses the related research and development costs for which the grants are intended to compensate. Government grants that are receivable as compensation for expenses already incurred are recognized in profit or loss in the period in which they become receivable.

The company obtains credits under the Australian R&D Tax Incentive program (R&DITC). The program provides a tax offset of 43.5% of eligible R&D expenditures. If the tax offset exceeds the Company's tax liability, the balance is paid in cash after submission of a valid claim. Based on the specific features of the program, IAS 20 Government Grants is applied for the accounting treatment of the Australian R&DITC. The reimbursement application is made by the Company annually, once the fiscal year is closed, based on the financial statements. The income from grants related to R&D expenditures are presented separately under the heading of 'other operating income'. Grants that relate to the acquisition of an asset are recognized in profit or loss as the asset is depreciated or amortized. These grants are recognized as a reduction in the cost of the asset.

Earnings/(loss) per share

Basic earnings/(loss) per share are calculated by dividing the net profit/(loss) attributable to owners of the Company by the weighted average number of shares outstanding during the period. Diluted earnings/(loss) per share are calculated by dividing the net profit/(loss) attributable to the owners of the Company by the weighted average number of shares outstanding during the period adjusted for the conversion of all dilutive potential ordinary shares.

4. New standards, amendments and interpretations adopted by the Group

In 2021, the following revised standards have been adopted:

IFRS 9/IAS 39/IFRS 7/IFRS 4/IFRS 16	Amendments to IFRS 9/IAS 39/IFRS 7/IFRS 4/IFRS 16, Interest Rate Benchmark Reform – Phase 2
IFRS 16	COVID-19-Related Rent Concessions beyond 30 June 2021

Adoption has not had a material impact on the amounts reported in these financial statements but may impact the accounting for future transactions and arrangements.

A number of new standards, amendments to standards and interpretations are effective for annual periods beginning after January 1, 2022, and have not been applied in preparing these consolidated financial statements.

Standard/Interpretation	Impact	Effective date	Planned application by the Group
<i>New standards, interpretations or amendments</i>			
IAS 16	Amendments to IAS 16, Proceeds before Intended Use	January 1, 2022	FY 2022
IAS 37	Amendments to IAS 37, Onerous contracts – Costs of Fulfilling a Contract	January 1, 2022	FY 2022
IFRS 3	Amendments to IFRS 3, References to the Conceptual Framework	January 1, 2022	FY 2022
IFRS 1, IFRS 9, IFRS 16, IAS 41	Annual improvements to IFRS Standards 2018-2020 Cycle	January 1, 2022	FY 2022
IFRS 17	Insurance contracts	January 1, 2023	FY 2023
IAS 1	Amendments to IAS 1, Classification of Liabilities as Current or Non-current	January 1, 2023	FY 2023
IAS 1	Amendments to IAS 1 and IFRS practice Statement 2, Disclosure of Accounting Policies	January 1, 2023	FY 2023
IAS 8	Amendments to IAS 8, Definition of Accounting Estimates	January 1, 2023	FY 2023
IAS 12	Amendments to IAS 12, Deferred tax related to Assets and Liabilities arising from a Single Transaction	January 1, 2023	FY 2023
IFRS 10, IAS 28	Amendments to IFRS 10 and IAS 28, Sale or Contribution of Assets between an Investor and its Associate or Joint Venture	1)	To be set

1) No material impact on the Group is expected from these standards and amendments issued but not effective.

5. Financial instruments and risk management

The following table shows the carrying amounts of financial assets and financial liabilities:

	<u>December 31,</u> <u>2021</u>	<u>December 31,</u> <u>2020</u>
Financial assets		
Cash and cash equivalents	984,191	11,258,870
Loans and receivables		
Other non-current financial assets	199,105	20,001
Other receivables	255,187	10,040
Total financial assets	<u><u>1,438,483</u></u>	<u><u>11,288,911</u></u>
Financial liabilities		
At amortized cost		
Trade and other payables	3,697,723	762,453
Accrued expenses	1,048,575	1,433,106
Loan	—	523,920
Non-current lease liabilities	461,485	—
Current lease liabilities	114,251	—
At fair value through profit and loss		
Derivative financial instruments	1,233	316,757
Total financial liabilities	<u><u>5,323,267</u></u>	<u><u>3,036,236</u></u>

Fair values

The carrying amount of cash and cash equivalents, other receivables, trade and other payables, accrued expenses and loan is a reasonable approximation of their fair value due to the short-term nature of these instruments.

Financial risk factors

The Group's activities expose it to a variety of financial risks: market risk, credit risk, interest rate and liquidity risk. The Group's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the Group's financial performance. Management identifies, evaluates and controls financial risks. No financial derivatives have been used in 2021 and 2020 to hedge risk exposures. The Group invests its available cash in instruments with the main objectives of preserving principal, meeting liquidity needs and minimizing foreign exchange risks. The Group allocates its liquid assets to first tier Swiss or international banks.

Liquidity risk

The Group's principal source of liquidity is its cash reserves which are mainly obtained through the issuance of new shares. The Group has succeeded in raising capital to fund its development activities to date and has raised funds that will allow it to meet short-term development expenditures. The Company will require regular capital injections to continue its development work, which may be dependent on meeting development milestones, technical results and/or commercial success. Management monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs. The ability of the Group to maintain adequate cash reserves to sustain its activities in the medium term is highly dependent on the Group's ability to raise further funds. Consequently, the Group is exposed to continued liquidity risk.

The table below analysis the remaining contractual maturities of financial liabilities, including estimated interest payments as of December 31, 2021 and 2020. The amounts disclosed in the table are the undiscounted cash flows:

	<u>Carrying amount</u>	<u>Less than 3 months</u>	<u>Between 3 months and 2 years</u>	<u>2 years and later</u>	<u>Total</u>
December 31, 2021					
Trade and other payables	3,697,723	3,697,723	—	—	3,697,723
Accrued expenses	1,048,575	1,048,575	—	—	1,048,575
Loan and borrowings	—	—	—	—	—
Non-current lease liabilities	461,485	—	117,856	343,629	461,485
Current lease liabilities	114,251	28,231	86,020	—	114,251
Derivative financial instruments	1,233	—	—	1,233	1,233
Total	5,323,267	4,774,529	203,876	344,862	5,323,267
	<u>Carrying amount</u>	<u>Less than 3 months</u>	<u>Between 3 months and 2 years</u>	<u>2 years and later</u>	<u>Total</u>
December 31, 2020					
Trade and other payables	762,453	762,453	—	—	762,453
Accrued expenses	1,433,106	1,433,106	—	—	1,433,106
Loan and borrowings	523,920	473,920	50,000	—	523,920
Derivative financial instruments	316,757	310,439	—	6,318	316,757
Total	3,036,236	2,979,918	50,000	6,318	3,036,236

Fair value measurement

Financial assets / liabilities	Fair values as at		Fair value hierarchy	Valuation technique(s) and key input(s)
	December 31, 2021	December 31, 2020		
Derivative financial liabilities – Warrants from public offerings	Liability 1,233	Liability 6,318	Level 2	Black-Scholes option pricing model The share price is determined by Company's NASDAQ quoted-price. The strike price and maturity are defined by the contract. The volatility assumption is driven by Company's historic quoted share price and the risk free rate is estimated based on observable yield curves at the end of each reporting period.
Derivative financial liabilities – Embedded derivatives	—	310,439	Level 3	Monte Carlo simulation model The valuation is based on input parameters classified as level 3. Input parameters include the historical volatility of AMHL shares, risk-free rate, expected remaining life, expected exercise date and share prices of AMHL at valuation dates.

For level 3 financial liability, the sensitivity analysis below represents the potential absolute change in fair value. The favorable and unfavorable effects on the result before taxes, resulting from using reasonably alternative assumptions for the valuation of the option component of the Convertible Loan (FiveT) has been calculated by recalibrating the modes using unobservable inputs based on an average change in volatility of 5%.

	Dec 31, 2021		Dec 31, 2020	
	Increase/Decrease in volatility assumption	Effect on result before taxes on CHF	Increase/Decrease in volatility assumption	Effect on result before taxes on CHF
Change in volatility	—	—	+5%	2,770
	—	—	-5%	-5,475

Changes in liabilities arising from financing activities

	01.01.2021	Financing Cash Flows ¹⁾	Non-cash changes		31.12.2021
			Fair value revaluation	Other changes ²⁾	
Derivative financial instrument	316,757	—	410,918	(726,442)	1,233
Loans	523,920	(50,000)	—	(473,920)	—
Lease liabilities	—	(21,700)	—	597,436	575,736
Total	840,677	(71,700)	410,918	(602,926)	576,969

	01.01.2020	Financing Cash Flows ¹⁾	Non-cash changes		31.12.2020
			Fair value revaluation	Other changes ²⁾	
Derivative financial instrument	4,353	—	219,315	93,089	316,757
Loans	—	1,522,931	—	(999,011)	523,920
Total	4,353	1,522,931	219,315	(905,922)	840,677

1) The financing cash flows are from loan borrowings or loan and lease repayments.

2) Other non-cash changes include conversion of convertible loan including de-recognition of embedded derivative and initial recognition of lease liability.

Credit risk

Credit risk is managed on a Group basis. Credit risk arises from cash and cash equivalents and deposits with banks, as well as from trade and other receivables. The Company's policy is to invest funds in low risk investments including interest bearing deposits. Trade and other receivables were current as of December 31, 2021 and December 31, 2020, not impaired and included only well-known counterparties.

The Group has been holding cash and cash equivalents in the Group's principal operating currencies (CHF, USD, EUR and AUD) with international banks of high credit rating.

The Group's maximum exposure to credit risk is represented by the carrying amount of each financial asset in the consolidated statement of financial position:

	December 31, 2021	December 31, 2020
Financial assets		
Cash and cash equivalents	984,191	11,258,870
Trade receivables	21,746	—
Other receivables	255,187	10,040
Total	1,261,124	11,268,910

As of December 31, 2021 other receivables consisted of cash receivable from a capital increase implemented over the year end and on December 31, 2020 of a bank deposit for guaranteeing credit card liabilities.

Market risk

Currency risk

The Group operates internationally and is exposed to foreign exchange risk arising from various exposures, primarily with respect to US Dollar, Euro and Australian Dollar. Foreign exchange risk arises from future commercial transactions, recognized assets and liabilities and net investments in foreign operations. The summary of quantitative data about the exposure of the Group's financial assets and liabilities to currency risk was as follows:

in CHF	2021			2020	
	USD	EUR	AUD	USD	EUR
Cash and cash equivalents	388,950	539,474	—	9,214,709	694,287
Trade and other receivables	1,436,086	26,843	1,274,271	479	—
Trade and other payables	(104,676)	(2,615,791)	—	(75,712)	(397,853)
Accrued expenses	(163,823)	(295,467)	—	(34,648)	(569,400)
Net statement of financial position exposure - asset/(liability)	1,556,537	(2,344,941)	1,274,271	9,104,828	(272,966)

As of December 31, 2021, a 5% increase or decrease in the USD/CHF exchange rate with all other variables held constant would have resulted in a CHF 77,827 (2020: CHF 455,241) increase or decrease in the net result. A 5% increase or decrease in the EUR/CHF exchange rate with all other variables held constant would have resulted in a CHF 117,247 (2020: CHF 13,648) increase or decrease in the net result. Also, a 5% increase or decrease in the AUD/CHF exchange rate with all other variables held constant would have resulted in a CHF 63,714 (2020: CHF 0) increase or decrease in the net result.

The Company has subsidiaries in the United States, Australia and Ireland, whose net assets are exposed to foreign currency translation risk. Due to the small size of the subsidiaries the translation risk is not significant.

Capital risk management

The Company and its subsidiaries are subject to capital maintenance requirements under local law in the country in which it operates. To ensure that statutory capital requirements are met, the Company monitors capital, at the entity level, on an interim basis as well as annually. From time to time the Company may take appropriate measures or propose capital increases to ensure the necessary capital remains intact.

6. Segment information

Geographical information

The Group's non-current assets by the Company's country of domicile were as follows:

	December 31, 2021	December 31, 2020
Switzerland	14,734,738	9,030,778
Australia	144,854	151,269
Total	14,879,592	9,182,047

Non-current assets exclude financial instruments.

7. Property and Equipment

	Production equipment	Office furniture and EDP	Total
At cost			
As of January 1, 2020	353,488	233,706	587,194
Additions	—	—	—
Disposals	—	—	—
As of December 31, 2020	353,488	233,706	587,194
Additions	—	—	—
Disposals	—	—	—
As of December 31, 2021	353,488	233,706	587,194
Accumulated depreciation			
As of January 1, 2020	(290,491)	(230,031)	(520,522)
Charge for the year	(16,481)	(3,555)	(20,036)
Disposals	—	—	—
As of December 31, 2020	(306,972)	(233,586)	(540,558)
Charge for the year	(46,516)	(119)	(46,635)
Disposals	—	—	—
As of December 31, 2021	(353,488)	(233,705)	(587,193)
Net book value			
As of December 31, 2020	46,516	120	46,636
As of December 31, 2021	—	1	1

As of December 31, 2021, and 2020 no items of property and equipment were pledged.

8. Right-of-use assets and lease liabilities

<i>Right-of-use assets</i>	Office building	Total
At cost		
As of January 1, 2020	—	—
As of December 31, 2020	—	—
Additions	594,436	594,436
Disposals	—	—
As of December 31, 2021	594,436	594,436
Accumulated depreciation		
As of January 1, 2020	—	—
As of December 31, 2020	—	—
Charge for the year	(29,722)	(29,722)
Disposals	—	—
As of December 31, 2021	(29,722)	(29,722)
Net book value		
As of December 31, 2020	—	—
As of December 31, 2021	564,714	564,714
Low value and short-term lease expenses		
	December 31, 2021	December 31, 2020
Expense related to short-term leases	52,280	61,509
Expense related to leases of low value assets	—	—
Total	52,280	61,509

	December 31, 2021	December 31, 2020
Lease liabilities		
As of January 1	—	—
Additions	594,436	—
Interest expenses	3,000	—
Repayment of lease liability	(21,700)	—
As of December 31	575,736	—
thereof non-current	461,485	—
thereof current	114,251	—
Maturities of lease liabilities		
	December 31, 2021	December 31, 2020
Year 1	130,200	—
Year 2	130,200	—
Year 3	130,200	—
Year 4	130,200	—
Year 5	97,650	—
Undiscounted lease payments	618,450	—
Less: unearned interest	(42,714)	—
Total	575,736	—

9. Intangible assets

	Licenses	IP & Data rights	Patents	Internally generated	Total
At cost					
As of January 1, 2020	1,482,520	193,989	239,593	4,849,511	6,765,613
Exchange differences				6,120	6,120
Additions	—	—	177,623	2,166,054	2,343,677
As of December 31, 2020	1,482,520	193,989	417,216	7,021,685	9,115,410
Exchange differences	—	—	—	(3,654)	(3,654)
Additions	3,893,681	—	55,938	2,783,431	6,733,050
As of December 31, 2021	5,376,201	193,989	473,154	9,801,462	15,844,806
Accumulated amortization and impairment losses					
As of December 31, 2020	—	—	—	—	—
Impairment	(1,482,520)	(47,409)	—	—	(1,529,929)
As of December 31, 2021	(1,482,520)	(47,409)	—	—	(1,529,929)
Net book value					
As of December 31, 2020	1,482,520	193,989	417,216	7,021,685	9,115,410
As of December 31, 2021	3,893,681	146,580	473,154	9,801,462	14,314,877

Intangible assets comprise upfront and milestone payments related to licenses. The increase in 2021 was related to the acquisition of Trasir Therapeutics Inc., which was treated as an asset acquisition because substantially all the fair value of Trasir was concentrated in a worldwide exclusive license agreement with Washington University (Note 3). Further, in 2021 all intangible assets related to the projects AM-101, AM-111 and AM-201 were impaired, taking into account the future repositioning of the company. Amortization will commence once the intangible assets are available for use, which will be the case after regulatory approvals are obtained and the related products are available for use.

In 2019, a US patent on AM-125 was issued and a related EU application was allowed. As a consequence, we started to capitalize prosecution and registration costs. In 2021, we capitalized CHF 55,938 (2020: CHF 177,623).

Commencing with the business year 2018, the Company recorded intangibles related to direct development expenditure of its AM-125 program. The capitalized amount for the year ended December 31, 2021 was CHF 2,839,369 (2020: CHF 2,343,677). The additions to internally generated intangibles of CHF 2,783,431 are net of CHF 94,118 government grants obtained under the Australian R&D tax incentive program (2020: CHF 0).

10. Inventories

	December 31, 2021	December 31, 2020
Finished goods	839,221	—
Total	839,221	—

As of December 31, 2021, the Company's inventory consisted of the product Bentrío, a drug-free nasal spray for protection against airborne viruses and allergens. Bentrío has a limited shelf life, which may affect the salability of the product, and is packaged in various configurations (stock keeping units, "SKUs") for different markets and in different languages to address specific requirements under national rules and regulations or by trade channels. During product launch, shelf life is still relatively short since data from supporting stability studies are still limited; this tends to restrict salability through certain trade channels. In addition, there is only limited visibility on product take-up across different markets due to the lack of a sales history, and national rules and regulations may require prior approval of certain marketing materials and messages. Based on a management review of the inventory as at December 31, 2021 for any obsolete or slow-moving items, the Company wrote down finished good inventories in the amount of CHF 2.0 million in 2021. The amount of the write down was expensed to the income statement under Cost of Sales.

11. Other receivables

	December 31, 2021	December 31, 2020
R&D tax credit receivable	470,958	—
Receivable from share issuance	255,187	—
Advance payments to suppliers	—	479
Value added tax receivable	168,851	38,337
Withholding tax receivable	7,336	6,087
Deposit credit cards	—	10,040
Other	15,501	25,918
Total other receivables	917,833	80,861

As described in note 3 Significant accounting policies, the Company obtains government grants under the Australian R&D Tax Incentive program. The R&D tax credit receivable as of December 31, 2021 relates to the reimbursement application for compensation of R&D expenditures incurred in 2021. Other receivables were not considered impaired in the years under review.

12. Prepayments

	December 31, 2021	December 31, 2020
Advance payments to suppliers	859,492	5,020
Clinical projects and related activities	—	164,916
Insurance	137,418	104,590
Other	—	3,063
Total prepayments	996,910	277,589

13. Cash and cash equivalents

	December 31, 2021	December 31, 2020
Cash in bank accounts	984,191	11,258,870
Cash on hand	—	—
Total cash and cash equivalents	984,191	11,258,870

14. Capital and reserves

Share capital

The issued share capital of the Company at December 31 consisted of:

	December 31, 2021		December 31, 2020	
	Number	CHF	Number	CHF
Common shares with a par value of CHF 0.01 each	14,964,261	149,643	11,417,159	114,172
Total	14,964,261	149,643	11,417,159	114,172

	Common Shares (Number)	
	2021	2020
As of January 1	11,417,159	4,125,949
Exercise of warrants	897,435	1,263,845
LPC equity line	—	1,610,120
ATM program	1,184,700	1,628,827
Share-based payments (bonus)	174,610	51,418
Conversion convertible loan	516,814	737,000
Shares issued for Trasir acquisition	773,543	—
Registered direct offering	—	2,000,000
Total, as of December 31	14,964,261	11,417,159

On June 1, 2021, the Company completed the acquisition of Trasir. The upfront acquisition price of USD 2.5 million was paid with 764,370 non-registered common shares at USD 3.27 each to the selling shareholders. In addition, 9,173 non-registered common shares were issued to reimburse USD 30,000 in expenses incurred by certain selling Trasir shareholders.

On December 3, 2020, the Company entered into securities purchase agreements with several institutional investors for the purchase and sale of 2,000,000 common shares at an offering price of \$4.00 per share, pursuant to a registered direct offering. The net proceeds of the offering were approximately \$7.3 million.

On December 1, 2020, a tranche of the convertible loan provided by FiveT in the amount of CHF 895,455 was converted into 737,000 common shares at a conversion price of \$1.35. On March 4, 2021 the remaining amount of CHF 604,545 plus interest of CHF 40,628 were converted into 516,814 common shares at a conversion price of \$1.35.

On April 23, 2020, the Company entered into a purchase agreement and a Registration Rights Agreement with Lincoln Park Capital Fund, LLC (the “2020 Commitment Purchase Agreement”). Pursuant to the purchase agreement, LPC agreed to subscribe for up to USD 10,000,000 of our common shares over the 30-month term of the purchase agreement. In 2020, we issued 1,200,000 of our common shares to LPC for an aggregate amount of USD 1.1 million. The 2020 Commitment Purchase Agreement replaced the 2018 Commitment Purchase Agreement. Under the 2018 Commitment Purchase Agreement agreed to purchase common shares for up to \$10,000,000 over the 30-month term of the Purchase Agreement. Prior to its termination we had issued 587,500 common shares for aggregate proceeds of \$1.8 million to LPC under the LPC Purchase Agreement. The Purchase Agreement replaced the Purchase Agreement that we entered into with LPC on October 10, 2017 (the “2017 Commitment Purchase Agreement”), which was terminated as a result of the Merger. Under the 2017 Commitment Purchase Agreement, LPC agreed to subscribe for up to \$13,500,000 of our common shares, and prior to its termination, we had issued an aggregate of 2,600,000 (pre-merger) common shares for aggregate proceeds of \$1.8 million to LPC under the 2017 Commitment Purchase Agreement.

On May 15, 2019, the Company completed a public offering of (i) 440,000 common shares with a par value of CHF 0.40 each, together with warrants to purchase 440,000 common shares, and (ii) 1,721,280 pre-funded warrants, with each pre-funded warrant exercisable for one common share, together with warrants to purchase 1,721,280 common shares, including 110,000 common shares and warrants to purchase 110,000 common shares sold pursuant to a partial exercise by the underwriters of the underwriters’ over-allotment option (the “May 2019 Registered Offering”). The exercise price for the pre-funded warrants was CHF 0.01 per common share and for the warrants CHF 4.34. The net proceeds to us from the May 2019 Registered Offering were approximately \$7.7 million, after deducting underwriting discounts and other offering expenses payable by us. All pre-funded warrants were exercised in 2019. In December 2020, 1,263,845 warrants were exercised. The remaining 897,435 warrants were exercised in March 2021.

On November 30, 2018, we entered into the A.G.P. Sales Agreement with A.G.P. Pursuant to the terms of the A.G.P. Sales Agreement, as amended on April 5, 2019, we may offer and sell our common shares, from time to time through A.G.P. by any method deemed to be an “at-the-market” offering as defined in Rule 415(a)(4) promulgated under the Securities Act. Pursuant to the A.G.P. Sales Agreement, we may sell common shares up to a maximum aggregate offering price of \$25.0 million. In 2021, we sold 1,184,700 shares under the ATM. As of the date of this Annual Report, we have sold 1,943,318 of our common shares for an aggregate offering price of \$5.4 million pursuant to the A.G.P. Sales Agreement. The related transaction costs of CHF 71,161 were charged to equity.

Authorized share capital

On January 24, 2019, our board of directors determined that it would be in our best interest to change our legal seat and jurisdiction of incorporation, respectively, from Switzerland to Bermuda (the “Redomestication”). The Company’s Memorandum of Continuance and the Bye-laws that were adopted at an extraordinary meeting of shareholders held on March 8, 2019 provided for an authorized share capital of 200,000,000 common shares and 20,000,000 preference shares. Following a reverse share split at a ratio of 20-for-1 on May 1, 2019, a decision by the annual general meeting of shareholders on June 4, 2020 to increase the authorized share capital and the reduction of the par value of June 30, 2020, our authorized share capital consists of 25,000,000 common shares, par value CHF 0.01 per share, and 20,000,000 preference shares, par value CHF 0.02 per share.

15. Share-based compensation

Description

In 2014, the Group introduced an equity incentive plan (the (“EIP”) as amended in 2017 and 2019. In September 2019, all employees and directors of the Company opted-in to forfeit all option grants received prior to 2019 in exchange for new options (the “September 2019 Conversion Grant”). The number of new options was calculated on a value neutral basis using the Black-Scholes model. Including the September 2019 Conversion Grant, the Company granted 390,620 options in 2019 under the EIP. Plan C was terminated in 2019. The last outstanding options under Plan C were replaced by the September 2019 Conversion Grant. In 2021, the Company granted 342,263 options (2020: 726,637 options) under the EIP.

Holders of vested options are entitled to purchase common shares of the Company. Under the Equity Incentive Plan, the Board of Directors defined the exercise price as the average daily closing price of the Company’s shares during the 30 days preceding the date of grant. All options are to be settled by the physical delivery of shares. The key terms and conditions related to the grants under these programs at December 31, 2021 are as follows:

Plan	Number of options outstanding	Vesting conditions	Contractual life of options
Equity Incentive Plan Board	279,771	1 year service from grant date	6 years
Equity Incentive Plan Management & Staff	523,881	2 years’ service from grant date (50%)	8 years
Equity Incentive Plan Management & Staff	523,881	3 years’ service from grant date (50%)	8 years

Measurement of fair values

The fair value of the options was measured based on the Black-Scholes formula.

	Stock Option Plan			
	Equity Incentive Plan 2021	Equity Incentive Plan 2021	Equity Incentive Plan 2020	Equity Incentive Plan 2020
Fair value at grant date	USD 0.932 (2 year vesting) ¹⁾ USD 1.107 (3 year vesting) ¹⁾	USD 1.241 (1 year vesting) ²⁾ USD 1.850 (2 year vesting) ²⁾ USD 2.183 (3 year vesting) ²⁾	USD 0.325 (2 year vesting) ¹⁾ USD 0.391 (3 year vesting) ¹⁾	USD 0.258 (1 year vesting) ²⁾ USD 0.514 (2 year vesting) ²⁾ USD 0.578 (3 year vesting) ²⁾
Share price at grant date	USD 1.64	USD 3.54	USD 0.79	USD 0.92
Exercise price	USD 1.889	USD 3.511	USD 0.878	USD 0.825
Expected volatility	93.4%	101.3%	84.96%	72.72%
Expected life	2 and 3 years	1, 2 and 3 years	2 and 3 years	1, 2 and 3 years
Expected dividends	—	—	—	—
Risk-free interest rate	0.47%	0.06%	0.82%	0.61%

1) October grants for the respective year

2) April grants for the respective year

The Company uses its own historic volatility to calculate expected volatility. The expected life of all options is assumed to correspond to the vesting period.

The total expense recognized for equity-settled share-based payment transactions were CHF 1,206,303 in 2021 (2020: CHF 368,793, 2019: CHF 228,920).

Share based compensation loss related to employee stock options amounted to CHF 1,223,696 in 2021 (2020: CHF 351,401, 2019: CHF 226,601).

Share based compensation expense of CHF 0 related to the purchase of intangibles was capitalized for the year ended December 31, 2021 (2020: CHF 0, 2019: 2,319).

The number and weighted average exercise prices (in CHF) of options under the share option programs are as follows:

	2021			2020		
	Number of options	Weighted average exercise price	Weighted average remaining term	Number of options	Weighted average exercise price	Weighted average remaining term
Outstanding at January 1	1,038,537	1.58	7.01	324,053	3.01	7.60
Expired during the year	—	—	—	—	—	—
Forfeited during the year	(51,290)	—	—	—	—	—
Exercised during the year	—	—	—	—	—	—
Granted during the year	342,263	2.27	—	714,484	0.87	—
Outstanding at December 31	1,329,510	1.65	6.56	1,038,537	1.58	7.01
Exercisable at December 31	288,446	—	—	37,576	—	—

The range of exercise prices for outstanding options was CHF 0.75 to CHF 28.79 as of December 31, 2021 and CHF 0.73 to CHF 27.93 as of December 31, 2020.

16. Trade and other payables

	December 31, 2021	December 31, 2020
Trade accounts payable - third parties	3,544,384	722,272
Other	153,339	40,181
Total trade and other payables	3,697,723	762,453

17. Accrued expenses

	December 31, 2021	December 31, 2020
Accrued research and development costs including milestone payments	557,391	1,105,089
Professional fees	179,461	172,273
Accrued vacation & overtime	51,218	44,466
Employee benefits incl. share based payments	196,917	101,821
Other	63,588	9,457
Total accrued expenses	1,048,575	1,433,106

18. Other operating income

	December 31, 2021	December 31, 2020	December 31, 2019
Income from R&D tax incentive (Government grants)	458,157	—	—
Refund of share issuance stamp duty	—	100,002	—
Other income	2,553	74,473	—
Total other operating income	460,710	174,475	—

19. Cost of Sales

	December 31, 2021	December 31, 2020	December 31, 2019
Product purchases, packaging and logistics	173,758	—	—
Employee benefit and expenses	89,238	—	—
Inventory write-down	1,977,558	—	—
Total cost of sales	2,240,554	—	—

20. Research and development expense

	December 31, 2021	December 31, 2020	December 31, 2019
Pre-clinical projects	587,019	242,617	182,346
Clinical projects	2,957,752	476,972	993,085
Product and process development	1,100,453	614,744	481,453
Employee benefits and expenses	1,897,155	1,120,814	1,373,543
Lease expenses from short-term lease	—	34,147	26,057
Patents and trademarks	465,587	246,592	168,367
Regulatory projects	354,507	110,612	80,347
Impairment intangible assets	1,529,929	—	—
Depreciation tangible assets	46,635	16,481	20,083
Total research and development expense	8,939,037	2,862,979	3,325,281

Research and development expenses were capitalized in the amount of CHF 2,839,369 during 2021 compared to CHF 2,343,677 in 2020.

21. Sales and marketing expense

	December 31, 2021	December 31, 2020	December 31, 2019
Marketing and sales expenses	1,132,864	—	—
Employee benefits and expenses	204,157	—	—
Product samples	161,167	—	—
Total sales and marketing	1,498,218	—	—

22. General and administrative expense

	December 31, 2021	December 31, 2020	December 31, 2019
Employee benefits and expenses	1,554,778	811,373	1,010,708
Business development	967,046	95,663	113,959
Travel expenses	75,829	28,898	102,679
Administration expenses	2,245,862	1,645,530	2,653,914
Lease expenses from short-term lease	52,280	13,871	27,362
Depreciation Right-of-use assets	29,722	—	—
Depreciation tangible assets	—	3,555	10,740
Capital tax expenses	21,059	(4,228)	14,501
Total general and administrative expenses	4,946,576	2,594,662	3,933,863

23. Employee benefits

	December 31, 2021	December 31, 2020	December 31, 2019
Salaries	1,865,633	1,260,359	1,832,382
Pension costs	165,801	156,843	130,792
Other social benefits	275,258	116,290	217,448
Share based payments costs	1,223,696	351,401	226,601
Other personnel expenditures	214,940	47,295	(22,973)
Total employee benefits	3,745,328	1,932,188	2,384,250

In 2021 share based compensation expense included CHF 902,817 for one regular and one extraordinary share bonus grant related to the strategic repositioning of the Company. The latter, which amounts to CHF 810,252, including CHF 360,112 for a future share grant contingent on achieving the Positive Results related to the Trasir transaction. Share based compensation included expense related to employee stock options of CHF 320,879 in the year 2021 compared to CHF 351,401 in 2020. On the other hand, expenses for salaries in the previous year had benefited from reimbursements of CHF 63,208 under the Swiss short-time work scheme, which had been used for three months in connection with a temporary reduction in project activities due to the COVID-19 pandemic.

Benefit plans

The Company participates in a retirement plan (the “Plan”) organized as an independent collective foundation, that covers all of its employees in Switzerland, including management. The collective foundation is governed by a foundation board. The board is made up of an equal number of employee and employer representatives of the affiliated companies. The Company has no direct influence on the investment strategy of the collective foundation. Moreover, certain elements of the employee benefits are defined in the same way for all affiliated companies. This is mainly related to the annuity factors at retirement and to interest allocated on retirement savings. The employer itself cannot determine the benefits or how they are financed directly. The foundation board of the collective foundation is responsible for the determination of the investment strategy, for making changes to the pension fund regulations and in particular, also for defining the financing of the pension benefits.

The old age benefits are based on retirement savings for each employee, coupled with annual retirement credits and interest (there is no possibility to credit negative interest). At retirement age, the insured members can choose whether to take a pension for life, which includes a spouse’s pension, or a lump sum. In addition to retirement benefits, the plan benefits also include disability and death benefits. Insured members may also buy into the scheme to improve their pension provision up to the maximum amount permitted under the rules of the plan and may withdraw funds early for the purchase of a residential property for their own use subject to limitations under Swiss law. On leaving the Company, retirement savings are transferred to the pension institution of the new employer or to a vested benefits institution. This type of benefit may result in pension payments varying considerably between individual years. In defining the benefits, the minimum requirements of the Swiss Law on Occupational Retirement, Survivors and Disability Pension Plans (BVG) and its implementing provisions must be observed. The BVG defines the minimum pensionable salary and the minimum retirement credits. In Switzerland, the minimum interest rate applicable to these minimum retirement savings is set by the Swiss Federal Council at least once every two years. The rate was 1.00% in 2019, 1.00% in 2020 and 1.00% in 2021.

The assets are invested by the collective foundation to which many companies contribute, in a diversified portfolio that respects the requirements of the Swiss BVG. Therefore, disaggregation of the pension assets and presentation of plan assets in classes that distinguish the nature and risks of those assets is not possible. Under the Plan, both the Company and the employee share the costs equally. The structure of the plan and the legal provisions of the BVG mean that the employer is exposed to actuarial risks. The main risks are investment risk, interest risk, disability risk and the risk of longevity. Through the affiliation to a collective foundation, the Company has minimized these risks, since they are shared between a much greater number of participants.

For accounting purposes under IFRS, the plan is treated as a defined benefit plan.

The following tables present information about the net defined benefit liability and its components:

Change in defined benefit obligation

	2021	2020
Defined benefit obligation at January 1	3,529,602	3,087,947
Service costs	162,200	151,624
Plan participants’ contribution	101,066	76,032
Interest cost	10,464	9,482
Actuarial losses	159,845	58,912
Plan amendments	(3,115)	—
Transfer-out amounts	(142,951)	(201,310)
Transfer-in amounts of new employees	860,521	346,915
Defined benefit obligation at December 31	4,677,632	3,529,602

The defined benefit obligation includes only liabilities for active employees. The weighted average modified duration of the defined benefit obligation at December 31, 2021 is 19.9 years (2020: 21.9 years).

Change in fair value of plan assets

	2021	2020
Fair value of plan assets at January 1	2,662,226	2,327,500
Interest income	8,586	7,429
Return on plan assets excluding interest income	424,829	32,794
Employer contributions	101,066	76,032
Plan participants’ contributions	101,066	76,032
Transfer-out amounts	(142,951)	(201,310)
Transfer-in amounts of new employees	860,521	346,915
Administration expense	(6,030)	(3,166)
Fair value of plan assets at December 31	4,009,313	2,662,226

Net defined benefit liability recognized in the statement of financial position

	December 31, 2021	December 31, 2020
Present value of funded defined benefit obligation	4,677,632	3,529,602
Fair value of plan assets	(4,009,313)	(2,662,226)
Net defined benefit liability	668,319	867,376

Defined Benefit Cost

	2021	2020	2019
Service cost	159,085	151,624	138,580
Net interest expense	1,878	2,053	5,137
Administration expense	6,030	3,166	4,051
Total defined costs for the year recognized in profit or loss	166,993	156,843	147,768

Remeasurement of the Defined Benefit Liability

	2021	2020	2019
Actuarial loss (gain) arising from changes in financial assumptions	(74,284)	13,031	360,541
Actuarial loss (gain) arising from experience adjustments	463,238	45,881	(215,156)
Actuarial gain arising from demographic assumptions	(229,109)	—	—
Return on plan assets excluding interest income	(424,829)	(32,794)	(73,375)
Total defined benefit cost for the year recognized in the other comprehensive loss (income)	(264,984)	26,118	72,010

Assumptions

At December 31	2021	2020	2019
Discount rate	0.30%	0.20%	0.30%
Future salary increase	0.85%	0.60%	1.10%
Pension indexation	0.00%	0.00%	0.00%
Mortality and disability rates	BVG2015G	BVG2015G	BVG2015G

Sensitivity analysis

Reasonably possible changes at the reporting date to one of the relevant actuarial assumptions, holding other assumptions constant, would have affected the defined benefit obligation by the amounts shown below.

December 31,	2021	2020
Change in assumption	0.25% increase	0.25% increase
Discount rate	(200,601)	(166,228)
Salary increase	22,961	13,602
Pension indexation	110,958	88,460
Change in assumption	+ 1 year	+ 1 year
Life expectancy	98,983	88,215

24. Finance income and finance expense

	2021	2020	2019
Interest income	3,219	258	17,882
Net foreign currency exchange gain	1,458,429	3,207,649	1,343,153
Revaluation gain from derivative financial instruments	5,085	—	663,725
Total finance income	1,466,733	3,207,907	2,024,760
Interest expense (incl. Bank charges)	189,695	135,151	28,628
Net foreign currency exchange loss	1,129,788	3,541,202	1,562,725
Revaluation loss from derivative financial instruments	416,003	2,250,222	—
Transaction costs	—	219,615	—
Total finance expense	1,735,486	6,146,190	1,591,353
Finance (expense)/income, net	(268,753)	(2,938,283)	433,407

In 2021, the revaluation loss from derivative financial instruments of CHF 416,003 is related to the revaluation of the financial derivatives embedded in the FiveT convertible loan (note 29), at conversion. The revaluation gain of CHF 5,085 is related to the revaluation of outstanding warrants from public offerings (note 30). In 2020 there was a revaluation loss from derivative financial instruments of CHF 2,250,222 and in 2019 a revaluation gain of CHF 663,725. In 2021, net foreign currency exchange gains contain translation gains of CHF 289,961 (2020: CHF 71,525; 2019: CHF 7,744) which arose on the Company's USD and EUR denominated cash and cash equivalents. In 2021, finance expenses included interest paid of CHF 3,700 (2020: CHF 0; 2019: CHF 3,745).

25. Taxation

The Group's income tax expense recognized in the consolidated statement of profit or loss and other comprehensive loss was as follows:

	2021	2020	2019
Deferred income tax expense	(570,730)	(389,384)	(213,355)
Deferred income tax gain	549,110	410,668	407,192
	(21,620)	21,284	193,837

The Group's effective income tax expense differed from the expected theoretical amount computed by applying the Group's applicable weighted average tax rate of 13.5% in 2021 (2020: 12.1%, 2019: 12.5%) as summarized in the following table:

Reconciliation	2021	2020	2019
Loss before income tax	(17,368,546)	(8,221,449)	(6,825,738)
Income tax at statutory tax rates applicable to results in the respective countries	2,348,057	991,120	854,636
Effect of unrecognized temporary differences	(632,031)	(302,557)	89,974
Effect of unrecognized taxable losses	(1,885,486)	(184,881)	(913,309)
Effect of utilization of previously unrecognized taxable losses	—	—	193,155
Effect of impairment of deferred tax assets	(75,375)	—	(131,055)
Effect of previously unrecognized deferred tax asset	—	97,458	20,977
Effect of expenses not considerable for tax purposes	—	(47,894)	(29,549)
Effect of changes in local tax legislation and/or local tax rates	—	—	110,758
Effect of impact from application of different tax rates	223,215	(531,962)	(1,750)
Income tax gain/(loss)	(21,620)	21,284	193,837

The tax effect of taxable temporary differences that give rise to deferred income tax liabilities or to deferred income tax assets as of December 31 is presented below:

	December 31, 2021	December 31, 2020
Deferred Tax Liabilities		
Intangible assets	(51,914)	(252,174)
Deferred unrealized foreign exchange gains	—	(350,054)
Other receivables	(122,449)	—
Total	(174,363)	(602,228)
	December 31, 2021	December 31, 2020
Deferred Tax Asset		
Net operating loss (NOL)	31,879	476,363
Total	31,879	476,363
Deferred Tax, net	(142,484)	(125,865)

	Opening Balance	Recognized in Profit or Loss	Recognized in Equity	Exchange Differences	Closing Balance
Deferred Tax 2021					
Intangible assets	(252,174)	199,056	—	1,204	(51,914)
Deferred unrealized foreign exchange gains	(350,054)	350,054	—	—	—
Other receivables	—	(127,000)	—	4,551	(122,449)
Net operating loss (NOL)	476,363	(443,730)	—	(754)	31,879
Total	(125,865)	(21,620)	—	5,001	(142,484)

	Opening Balance	Recognized in Profit or Loss	Recognized in Equity	Recognized in Equity	Closing Balance
Deferred Tax 2020					
Intangible assets	(212,844)	(39,330)	—	—	(252,174)
Deferred unrealized foreign exchange gains	—	(350,054)	—	—	(350,054)
Derivative financial asset	(26,156)	26,156	—	—	—
Net operating loss (NOL)	91,851	384,512	—	—	476,363
Total	(147,149)	21,284	—	—	(125,865)

As of December 31, 2021, the Group had unrecognized tax loss carryforwards amounting to CHF 109.9 million (2020: CHF 114.0 million), of which CHF 108.6 million related to Auris Medical AG, Otolanum AG, Zilentin AG and Altamira Medica AG in Switzerland, CHF 1.3 million to Altamira Therapeutics Inc. in the United States (2020: CHF 113.0 million for Auris Medical AG, Otolanum AG, Zilentin AG and Altamira Medica AG and CHF 1.0 million for Auris Medical Inc.).

The Group's unrecognized tax loss carryforwards with their expiry dates are as follows:

	December 31, 2021	December 31, 2020
Within 1 year	28,909,896	19,575,171
Between 1 and 3 years	50,673,943	56,866,795
Between 3 and 7 years	29,007,049	36,701,692
More than 7 years	1,264,262	870,200
Total	109,855,150	114,013,858

Due to the uncertainty surrounding the future results of operations and the uncertainty as to whether the Group can use the loss carryforwards for tax purposes, deferred tax assets on tax loss carryforwards were only considered to the extent that they offset taxable temporary differences within the same taxable entity. No deferred tax assets are calculated on temporary differences related to pension obligations from IAS 19.

The tax effect of the major unrecognized temporary differences and loss carryforwards is presented in the table below:

	<u>December 31, 2021</u>	<u>December 31, 2020</u>
Deductible temporary differences		
Employee benefit plan	87,149	113,106
Derivative financial instruments	—	36,973
Other accounts payable	344,822	258,303
Stock option plans	—	—
Total potential tax assets	<u>431,971</u>	<u>408,382</u>
Taxable unrecognized temporary differences		
Convertible loan	—	19,359
Total unrecognized potential tax liabilities	<u>—</u>	<u>19,359</u>
Offsetting potential tax liabilities with potential tax assets	—	(19,359)
Net potential tax assets from temporary differences not recognized	431,971	389,023
Potential tax assets from loss carry-forwards not recognized	14,271,306	14,896,367
Total potential tax assets from loss carry-forwards and temporary differences not recognized	<u>14,703,277</u>	<u>15,285,390</u>

26. Loss per share

	<u>December 31, 2021</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Loss attributable to owners of the Company	(17,390,166)	(8,200,165)	(6,631,901)
Weighted average number of shares outstanding	13,246,281	6,014,146	2,909,056
Basic and diluted loss per share	<u>(1.31)</u>	<u>(1.36)</u>	<u>(2.28)</u>

For the years ended December 31, 2021 and 2020 basic and diluted loss per share is based on the weighted average number of shares issued and outstanding and excludes shares to be issued under the Stock Option Plans (Note 15) as they would be anti-dilutive. As of December 31, 2021, the Company had 1,329,510 options outstanding under its stock option plans. The average number of options outstanding between January 1, 2021 and December 31, 2021 was 1,149,761 (633,314 for the period between January 1, 2020 and December 31, 2020). As of December 31, 2021, the Company had warrants to purchase up to 246,102 of its common shares issued and outstanding (as of December 31, 2020, the Company had warrants to purchase up to 1,143,537 common shares).

27. Commitments and contingencies

Lease commitments

The future minimum lease payments under non-cancellable lease term that are not accounted for in the statement of financial position were as follows:

	December 31, 2021	December 31, 2020
Within one year	3,450	25,580
Between one and five years	—	—
Total	3,450	25,580

Office lease expenses of CHF 52,280, CHF 50,260 and CHF 49,314 were recorded in 2021, 2020 and 2019, respectively, in the consolidated statement of profit or loss and other comprehensive loss.

28. Related party transactions

For purposes of these consolidated financial statements, parties are considered to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial or operational decisions. Also, parties under common control of the Group are considered to be related. Key management personnel are also related parties. In considering each possible related party relationship, attention is directed to the substance of the relationship, and not merely the legal form.

Ante Treuhand AG (“Ante Treuhand”) provided the Chief Financial Officer to the Company until November 18, 2021. The Chief Financial Officer is an employee of Ante Treuhand and is not paid directly by the Company. Fees paid to Ante Treuhand for CFO services in 2021 were CHF 231,770 (CHF 2020: 173,030). Fees paid to Ante Treuhand for other services provided during the year ended December 31, 2021 were CHF 3,025 (2020: CHF 18,020).

Gremaud GmbH provides the Chief Financial Officer to the Company since November 19, 2021. The Chief Financial Officer is an employee of Gremaud GmbH and is not paid directly by the Company. Fees paid to Gremaud GmbH for CFO services in 2021 were CHF 14,720. Fees paid to Gremaud GmbH for other services provided during the year ended December 31, 2021 were CHF 161,596 (2020 CHF 27,625).

Compensation of the members of the Board of Directors and Management

In 2021, the total compensation paid to management amounted to CHF 1,210,472 (2020: CHF 522,237; 2019: CHF 934,179). The fees paid to members of the Board of Directors in 2021 for their activities as board members totaled CHF 165,245 (2020: CHF 163,476; 2019: CHF 170,755).

	Executive Management			Board of Directors			Total		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
Short term benefits	781,204	407,147	717,905	165,245	163,476	170,755	946,449	570,623	888,660
Post-employee benefits years	29,467	26,870	42,560	—	—	—	29,467	26,870	42,560
Share Bonuses	902,817	—	—	—	—	—	902,817	—	—
Share-based payment charge	192,362	204,840	109,912	48,046	57,148	49,323	240,408	261,988	159,235
Total	1,905,850	638,857	870,377	213,291	220,624	220,078	2,119,141	859,481	1,090,455

In 2021, CHF 240,408 (2020: CHF 261,988; 2019: CHF 159,235) was expensed for grants of stock options to members of the Board of Directors and management. The 2021 share based payment charge shown above excludes adjustments for instruments forfeited in 2021 due to termination of service. In 2021 one regular and one extraordinary bonus were granted in shares. Contributions to pension schemes amounted to CHF 29,467, CHF 26,870 and CHF 42,560 during the years 2021, 2020 and 2019, respectively. No termination benefits or other long-term benefits were paid.

Members of the Board of Directors and management held 989,606, 769,101 and 271,999 stock options as of December 31, 2021, 2020, and 2019, respectively.

29. Loan

	December 31, 2021	December 31, 2020
Loan guaranteed by Swiss government (COVID-19)	—	50,000
Convertible loan	—	473,920
Total	—	523,920

Convertible Loan Agreement

	December 31, 2021	December 31, 2020
As of January 1	473,920	—
Gross proceeds at disbursement date	—	1,500,000
Embedded derivative, separated	—	(230,974)
Transaction costs allocated to host	—	(22,495)
Carrying amount at initial recognition	—	1,246,531
Converted principal amount	(644,813)	(895,455)
Accrued interest at 8%	8,348	31,920
Amortization	162,545	90,924
As of December 31	—	473,920

On September 7, 2020, our affiliate Altamira Medica AG (“Altamira”) and Auris Medical Holding Ltd. (“the Company”) entered into a convertible loan agreement with FiveT Capital Holding AG (“FiveT”) to raise CHF 1,500,000 to fund the initial development of AM-301. The loan has a term of 18 months and carries interest at 8% p.a., which shall not be paid in cash but added to the loan outstanding amount. At maturity, the unconverted outstanding amount of the loan including accrued interest shall become payable in cash. Altamira may choose to repay the total outstanding amount including the accrued interest at 130%, first time after 6 months with a prior written notice of 1 month. Prior to the expiry of the repayment notice period, the lender may convert the repayment amount.

Under the convertible loan agreement FiveT has the right to convert the outstanding principal amount including interest into the Company’s common shares or alternatively into Altamira shares. The pricing of a conversion into our common shares is at the lower of 150% of the share price at close of the disbursement date (\$1.35 fixed on September 8, 2020) and 95% of the average price of our common share at close of the 5 trading dates preceding the date of the conversion notice. However, the conversion price shall not be less than the higher of the par value and the backward-looking 3-month floor price of 75% of the average closing price of our common shares. The pricing of a conversion into Altamira shares is at the lower of CHF 3.00 and the issue price of a qualified financing round, meaning that a third-party investor will hold at least 10% of Altamira shares after completion of such financing round. The convertible loan agreement further contains a limitation on the conversion rights in the sense that they may not result in an ownership interest of more than 9.99% in the Company or 49.99% in Altamira. By December 31, 2020, an amount of CHF 895,455 has been converted into 737,000 common shares of the Company (at a conversion price of \$1.35).

The convertible loan is classified as a hybrid contract containing a host that is a financial liability and embedded derivatives separated from the host and measured at fair value with all changes in fair value recognized in profit or loss. The embedded financial derivatives are valued by an independent consultant initially and at period end at fair value, applying a simulation-based valuation approach. The valuation of the embedded financial derivatives is based on input parameters, classified as Level 3. One of the significant inputs is the historical volatility of the Company’s common shares. The underlying share price development has been simulated based on a Geometric Brownian Motion (GBM). In accordance with the GBM definition, a normalized, sustainable level of volatility was applied. The normalized volatility used as per December 31, 2020 was 90.9%, over a lookback period of 12 months. Other significant assumptions relate to the expected exercise date, the expected execution date, the calculation of the repayment amount, as well as assumptions with regards to the early repayment trigger and to the conversion option in Altamira shares. The embedded derivatives of the convertible loan are closely related to each other and are therefore accounted for as a single instrument (i.e., a compound derivative). Due to the conversion based on market share price, the conversion right may result in a variable number of conversion shares and the embedded derivatives are therefore classified as a financial liability.

The carrying amount of the host contract at initial recognition is the difference between the carrying amount of the hybrid contract and the fair value of the embedded derivatives. The host is then subsequently measured at amortized cost, using the effective interest rate method. As of December 31, 2020, the carrying amount (including accrued interest) of the host for the unconverted outstanding loan amounted to CHF 473,920 and is included in the balance sheet under current liabilities. On March 4, 2021, the remaining amount of CHF 644,813 including amortization and interest was converted into 516,814 common shares of Altamira at a conversion price of USD 1.35. As a result, the carrying amount of the convertible loan as of December 31, 2021 is CHF 0.

The fair value of the embedded derivatives of the outstanding loan units amounted to CHF 0 (31.12.2020: CHF 310,439 included in current derivative financial instruments). Expenses related to fair value measurement of embedded derivatives of CHF 416,003 (2020: CHF 2,248,257) as well as effective interest and transaction costs of CHF 170,893 (2020: CHF 127,418) were recorded as financial expenses in profit or loss.

30. Warrants from Public Offering

On February 21, 2017, the Company completed a public offering (the “February 2017 Offering”) of 10,000,000 (pre-merger) common shares with a nominal value of CHF 0.40 each and 10,000,000 (pre-merger) warrants, each warrant entitling its holder to purchase 0.70 of a common share. The net proceeds to the Company from the February 2017 Offering were approximately CHF 9.1 million (\$ 9.1 million), after deducting underwriting discounts and other estimated offering expenses payable by us. The Company had transaction costs amounting to CHF 903,919. The transactions costs were recorded as CHF 397,685 in equity for the issuance of the common shares and CHF 506,234 to finance expense in the statement of profit or loss and comprehensive loss for the issuance of the warrants.

The underwriter was granted a 30-day option to purchase up to 1,500,000 (pre-merger) additional common shares and/or 1,500,000 (pre-merger) additional warrants. On February 15, 2017, the underwriter partially exercised its 30-day option to purchase additional common shares and/or warrants in the amount of 1,350,000 (pre-merger) warrants.

Consequently, the Company issued warrants to purchase up to 7,945,000 (pre-merger) of its common shares at an exercise price of \$ 1.20 per share. The warrants are exercisable during a five-year period beginning on date of issuance. The fair value calculation of the warrants is based on the Black-Scholes option price model. Assumptions are made regarding inputs such as volatility and the risk-free rate in order to determine the fair value of the warrant. If a warrant is exercised, the Company will receive variable proceeds because the Company's functional currency is CHF and the exercise price is in USD, which results in the warrants being considered liability instruments. Therefore, the warrants were assigned fair values using the Black-Scholes model. The residual value was assigned to the common share sold along with each warrant in accordance with IAS 32 Financial instruments. The gross proceeds from the February 2017 offering were CHF 9,998,305 of which CHF 5,091,817 (fair value as of February 21, 2017) was assigned to the warrants and CHF 4,906,488 was assigned to equity.

As of December 31, 2021, the outstanding warrants issued in the 2017 February Offering are exercisable for up to 39,725 common shares at an exercise price of \$240.00. As of December 31, 2021, the fair value of the warrants amounted to CHF 0.00 (2020: CHF 0.00). As the fair value remained unchanged, no revaluation gain or loss resulted for the year ended December 31, 2021.

On January 30, 2018, the Company issued warrants in connection with a direct offering of 62,499 common shares, each warrant entitling its holder to purchase 0.6 common shares at an exercise price of \$100.00 per common share. As of December 31, 2021, the outstanding warrants issued in such offering were exercisable for up to 37,501 common shares at an exercise price of \$100.00 per common share. As of December 31, 2021 the fair value of the warrants amounted to CHF 1,233 (2020: CHF 6,318). The revaluation gain of the derivative for the twelve months ended December 31, 2021 amounted to CHF 5,085 (2020: revaluation loss of CHF 1,965). Since its initial recognition on January 30, 2018, the fair value of the warrants has decreased by CHF 2,482,514 resulting in a gain in the corresponding amount (fair value as of January 30, 2018: CHF 2,483,747).

On July 17, 2018, the Company issued Series A warrants each entitling its holder to purchase 0.35 of a common share for an aggregate of 314,102 common shares, and Series B warrants entitling its holder to purchase 0.25 of a common share for an aggregate of 224,358 common shares in connection with the July 2018 Registered Offering of 897,435 common shares, each warrant entitling its holder to purchase one common share at an original exercise price of CHF 7.80 per common share. Revaluation gain/(loss) show the changes in fair value of the outstanding Series B warrant issued in connection with this offering.

As of December 31, 2019, 145,226 Series A warrants were exercised for an aggregate amount of CHF 1,132,762 and 143,221 Series B warrants were exercised for an aggregate amount of CHF 1,117,125.

As of December 31, 2019, 143,221 Series B exercised warrants were subject to revaluation at the time that they were exercised and the fair value amounted to CHF 3,005,348. Since its initial recognition on July 17, 2018 the fair value of the warrants has increased by CHF 2,433,099, resulting in a loss in the corresponding amounts (fair value as of July 17, 2018: CHF 572,249). On June 18, 2020, the Series B warrants expired without further warrants being exercised.

Due to the expiry on June 18, 2020, no Series B warrants were outstanding and subject to revaluation on December 31, 2021 and 2020. Accordingly, there was no revaluation gain or loss on these warrants for the year ended December 31, 2021 and 2020.

31. Events after the balance sheet date

On February 4, 2022, the Company entered into a convertible loan agreement (the "Loan Agreement") with FiveT Investment Management Ltd. (the "Lender"), pursuant to which the Lender has agreed to loan to the Company CHF 5,000,000 (the "Loan"), which Loan bears interest at the rate of 10% per annum and matures 12 months from the date (the "Disbursement Date") the Loan proceeds were disbursed to the Company, which occurred on February 8, 2022. The Company may prepay all or part of the Loan after six months after the Disbursement Date; provided that the Company will pay an amount equal to 130% of the desired prepayment amount. The Lender has the right to convert all or part of the Loan, including accrued and unpaid interest, at its option, into common shares, subject to the limitation that the Lender own no more than 9.99% of the common shares at any time. The conversion price of the Loan into common shares is USD 1.9458, which corresponds to 150% of USD 1.2972 (the trading volume weighted average price, the "VWAP", per common share on the NASDAQ stock exchange on the Disbursement Date), converted into Swiss Francs at the midpoint of the interbank exchange rate shown by UBS on the day of receipt of the conversion notice at 4:00 pm Central European Time. The conversion price shall be lowered in the event that the Company raises equity before the maturity date of the Loan through a public or private offering of common shares at an issue price that is at least 10 (ten) % below the VWAP (the "New Issue"), according to the formula set forth in the Loan Agreement (the "Adjustment"). Sales of common shares through equity line or at-the-market programs are not considered New Issues triggering the Adjustment.

On March 4, 2022 we announced that we had entered into an exclusive licensing and distribution agreement for Bentrío™ with Nuance Pharma Ltd. ("Nuance") in Chinese Mainland, Hong Kong, Macau and South Korea (the "Territory"). Under the terms of the Agreement, we will initially supply Bentrío™ to Nuance. Nuance will make an upfront payment of \$1 million and pay to Altamira development and commercial milestones of up to \$3 million and up to \$19.5 million, respectively. Nuance will have the right to register and commercialize Bentrío™ in the Territory. In a second stage, Nuance will assume local production of the product for the Territory upon certain milestones. Once Nuance assumes local production of Bentrío™, it will pay to Altamira a staggered royalty on net sales in the Territory at a high-single to low-double-digit percentage.

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Condensed Consolidated Interim Statement of Profit or Loss and Other Comprehensive Income or Loss (unaudited)
For the Six Months Ended June 30, 2022 and 2021 (in CHF)

	Note	SIX MONTHS ENDED JUNE 30	
		2022	2021
Revenue		1,222,998	-
Cost of Sales		(1,192,232)	-
Gross profit		30,766	-
Other operating income		255,820	-
Research and development		(3,563,883)	(3,393,710)
Sales and marketing		(2,129,881)	-
General and administrative		(2,076,383)	(3,062,199)
Operating loss		(7,483,561)	(6,455,909)
Interest expense	2	(376,848)	(172,462)
Foreign currency exchange gain (loss), net		58,296	291,892
Revaluation (loss) gain from derivative financial instruments	4, 5	450,847	(428,742)
Transaction costs		(1,137)	-
Loss before tax		(7,352,403)	(6,765,221)
Income tax gain	3	46,085	10,642
Net loss attributable to owners of the Company		(7,306,318)	(6,754,579)
Other comprehensive income:			
Items that will never be reclassified to profit or loss			
Remeasurement of defined benefit liability, net of taxes of CHF 0.00		209,526	448,946
Items that are or may be reclassified to Profit or loss			
Foreign currency translation differences, net of taxes of CHF 0.00		(63,477)	(41,922)
Other comprehensive income, net of taxes of CHF 0		146,049	407,024
Total comprehensive loss attributable to owners of the Company		(7,160,269)	(6,347,555)
Basic and diluted loss per share	9	(9.43)	(10.85)

The accompanying notes form an integral part of these condensed consolidated interim financial statements

Condensed Consolidated Interim Statement of Financial Position (unaudited)

As of June 30, 2022 and December 31, 2021 (in CHF)

	<u>Note</u>	<u>JUNE 30,</u> <u>2022</u>	<u>DECEMBER 31,</u> <u>2021</u>
ASSETS			
Non-current assets			
Property and equipment		1	1
Right-of-use assets		505,270	564,714
Intangible assets	2	15,851,501	14,314,877
Other non-current financial assets		195,421	199,105
Total non-current assets		<u>16,552,193</u>	<u>15,078,697</u>
Current assets			
Inventories		146,366	839,221
Trade receivables		182,167	21,746
Other receivables		444,034	671,340
Prepayments		782,469	1,575,126
Cash and cash equivalents		372,647	984,191
Total current assets		<u>1,927,683</u>	<u>4,091,624</u>
Total assets		<u>18,479,876</u>	<u>19,170,321</u>
EQUITY AND LIABILITIES			
Equity			
Share capital	4	170,643	149,643
Share premium		190,108,850	188,511,476
Foreign currency translation reserve		(1,408)	62,069
Accumulated deficit		(182,602,921)	(175,686,937)
Total shareholders' equity attributable to owners of the Company		<u>7,675,164</u>	<u>13,036,251</u>
Non-current liabilities			
Derivative financial instruments	4	-	1,233
Non-current lease liabilities		403,015	461,485
Employee benefits		515,174	668,319
Deferred tax liabilities	3	95,999	142,484
Total non-current liabilities		<u>1,014,188</u>	<u>1,273,521</u>
Current liabilities			
Loan	2, 5	4,701,906	-
Derivative financial instruments	2, 5	284	-
Current lease liabilities		116,040	114,251
Trade and other payables		3,164,754	3,697,723
Accrued expenses		1,807,540	1,048,575
Total current liabilities		<u>9,790,524</u>	<u>4,860,549</u>
Total liabilities		<u>10,804,712</u>	<u>6,134,070</u>
Total equity and liabilities		<u>18,479,876</u>	<u>19,170,321</u>

The accompanying notes form an integral part of these condensed consolidated interim financial statements

Condensed Consolidated Interim Statement of Changes in Equity (unaudited)

As of June 30, 2022 and 2021 (in CHF)

	NOTE	ATTRIBUTABLE TO OWNERS OF THE COMPANY				TOTAL EQUITY
		SHARE CAPITAL	SHARE PREMIUM	FX TRANSLATION RESERVE	ACCUMULATED DEFICIT	
As of January 1, 2021		114,172	177,230,300	61,297	(160,635,879)	16,769,890
Total comprehensive loss						
Net loss		—	—	—	(6,754,579)	(6,754,579)
Other comprehensive (loss)/income		—	—	(41,922)	448,946	407,024
Total comprehensive loss		—	—	(41,922)	(6,305,633)	(6,347,555)
Transactions with owners of the Company						
Capital increase /Exercise of warrants		8,974	3,885,764	—	—	3,894,738
Conversion of loan		5,168	1,366,087	—	—	1,371,255
Share based/Asset purchase		7,735	2,266,735	—	1,078,800	3,353,270
Share based payments	6	382	92,181	—	952,349	1,044,912
Balance at June 30, 2021	4	136,431	184,841,067	19,375	(164,910,363)	20,086,510
As of January 1, 2022		149,643	188,511,476	62,069	(175,686,937)	13,036,251
Total comprehensive loss						
Net loss		—	—	—	(7,306,318)	(7,306,318)
Other comprehensive income/(loss)		—	—	(63,477)	209,526	146,049
Total comprehensive loss		—	—	(63,477)	(7,096,792)	(7,160,269)
Transactions with owners of the Company						
Capital increase	4	21,000	1,597,374	—	—	1,618,374
Share based payments	6	—	—	—	180,808	180,808
Balance at June 30, 2022	4	170,643	190,108,850	(1,408)	(182,602,921)	7,675,164

The accompanying notes form an integral part of these condensed consolidated interim financial statements

Condensed Consolidated Interim Statement of Cash Flows (unaudited)
For the Six Months Ended June 30, 2022 and 2021 (in CHF)

	<u>Note</u>	<u>SIX MONTHS ENDED JUNE, 2022</u>	<u>SIX MONTHS ENDED JUNE, 2021</u>
Cash flows from operating activities			
Net loss		(7,306,318)	(6,754,579)
Adjustments for:			
Depreciation		59,444	23,636
Unrealized foreign currency exchange (gain)/loss, net		(33,129)	(318,319)
Net interest expense		366,343	170,906
Share based payments	6	180,808	1,044,912
Employee benefits		56,381	26,101
Transaction costs		1,138	-
Fair value derivative financial instruments		(450,847)	428,742
Deferred tax (gain)/loss	3	(47,316)	(10,642)
		<u>(7,173,496)</u>	<u>(5,389,243)</u>
Changes in:			
Inventories		692,855	(196,415)
Other receivables		23,346	(59,446)
Prepayments		785,834	(66,403)
Trade and other payables		(419,075)	714,292
Accrued expenses		506,806	78,646
Net cash used in operating activities		<u>(5,583,730)</u>	<u>(4,918,569)</u>
Cash flows from investing activities			
Purchase of intangibles		(1,533,568)	(1,988,907)
Net cash used in investing activities		<u>(1,533,568)</u>	<u>(1,988,907)</u>
Cash flows from financing activities			
Proceeds from equity issuance and public offering	4	1,618,374	3,894,739
Proceeds from loan	5	4,988,626	-
Repayment of loan	5	-	(50,000)
Repayment of lease liability		(56,682)	-
Interest paid		(8,413)	(13)
Net cash from financing activities		<u>6,541,905</u>	<u>3,844,726</u>
Net increase/(decrease) in cash and cash equivalents		(575,393)	(3,062,750)
Cash and cash equivalents at beginning of the period		984,191	11,258,870
Net effect of currency translation on cash		(36,151)	270,878
Cash and cash equivalents at end of the period		<u><u>372,647</u></u>	<u><u>8,466,998</u></u>

Non-cash transactions

Changes in inventories for the six months ended June 30, 2022, include a write-down of inventories of CHF 0.8 million (June 30, 2021: zero).

The accompanying notes form an integral part of these condensed consolidated interim financial statements

Altamira Therapeutics Ltd.

Notes to the Condensed Consolidated Interim Financial Statements

As of June 30, 2022 and December 31, 2021 and for the Six Months Ended June 30, 2022 and 2021 (in CHF)

1. Reporting entity

Altamira Therapeutics Ltd. (the “Company”) is an exempted company incorporated under the laws of Bermuda. The Company began its operations as a corporation organized in accordance with Swiss law and domiciled in Switzerland under the name Auris Medical Holding AG (“Auris Medical (Switzerland)”). Following shareholder approval at an extraordinary general meeting of shareholders held on March 8, 2019 and upon the issuance of a certificate of continuance by the Registrar of Companies in Bermuda on March 18, 2019, the Company discontinued as a Swiss company and, pursuant to Article 163 of the Swiss Federal Act on Private International Law and pursuant to Section 132C of the Companies Act 1981 of Bermuda (the “Companies Act”), continued existence under the Companies Act as a Bermuda company with the name “Auris Medical Holding Ltd.” (the “Redomestication”). On March 18, 2019, the common shares of the Company began trading on the Nasdaq Capital Market under the trading symbol “EARS”. The Company’s registered office is located at Clarendon House, 2 Church Street, Hamilton HM 11, Bermuda. On July 21, 2021, the Company changed its name to Altamira Therapeutics Ltd. Since July 26, 2021, the Company’s common shares are traded under the trading symbol “CYTO”. On October 25, 2022, the Company effected a one-for-twenty reverse share split (the “2022 Reverse Share Split”) of the Company’s issued and outstanding common shares. Unless indicated or the context otherwise requires, all per share amounts and numbers of common shares in this report have been retrospectively adjusted for the 2022 Reverse Share Split, as if such 2022 Reverse Share Split occurred on the first day of the periods presented.

These condensed consolidated interim financial statements comprise the Company and its subsidiaries (together referred to as the “Group” and individually as “Group entities”). The Company is the ultimate parent of the following Group entities:

- Auris Medical AG, Basel, Switzerland (100%) with a nominal share capital of CHF 2,500,000
- Otolanum AG, Zug, Switzerland (100%) with a nominal share capital of CHF 100,000
- Altamira Therapeutics, Inc., Dover, Delaware, United States (100%) with a nominal share capital of USD 100
- Auris Medical Ltd., Dublin, Ireland (100%) with a nominal share capital of EUR 100
- Zilentin AG, Zug, Switzerland (100%) with a nominal share capital of CHF 100,000
- Auris Medical Pty Ltd, Collingwood, Australia (100%) with a nominal share capital of AUD 100
- Altamira Medica AG, Zug, Switzerland (100%) with a nominal share capital of CHF 3,000,000

The Group is primarily involved in the development of novel products that address important unmet medical needs through RNA therapeutics, allergy and viral infection protection, and inner ear therapeutics. The Group is focusing on the development of RNA therapeutics for extrahepatic therapeutic targets (AM-401 and AM-411), nasal sprays for protection against airborne viruses and allergens (AM-301; Bentrío™) or the treatment of vertigo (AM-125), and the development of therapeutics for intratympanic treatment of tinnitus or hearing loss (AM-101; Keyzilen® and AM-111; Sonsuvi®).

2. Basis of preparation

Statement of compliance

These condensed consolidated interim financial statements as of June 30, 2022 and for the six months ended June 30, 2022 have been prepared in accordance with International Accounting Standard 34 *Interim Financial Reporting* (“IAS 34”) and should be read in conjunction with the audited consolidated financial statements as of and for the year ended December 31, 2021.

These condensed consolidated interim financial statements include all adjustments that are necessary to fairly state the results of the interim period. The Group believes that the disclosures are adequate to make the information presented not misleading. Interim results are not necessarily indicative of results to be expected for the full year. Management does not consider the business to be seasonal or cyclical.

Certain information and footnote disclosures normally included in consolidated financial statements prepared in accordance with International Financial Reporting Standards (“IFRS”), as issued by the International Accounting Standards Board, have been condensed or omitted as permitted by IAS 34. The condensed consolidated statement of financial position as of December 31, 2021 was derived from the audited consolidated financial statements.

The interim condensed consolidated financial statements were authorized for issuance by the Company’s Audit Committee on November 28, 2022

Functional and reporting currency

These interim condensed consolidated financial statements are presented in Swiss Francs (“CHF”), which is the Company’s functional currency (“functional currency”) and the Group’s reporting currency.

Significant accounting policies

The accounting policies applied by the Group in these condensed consolidated interim financial statements are the same as those applied by the Group in its audited consolidated financial statements as of and for the year ended December 31, 2021 and have been applied consistently to all periods presented in these condensed consolidated interim financial statements, unless otherwise indicated.

New standards, amendments and interpretations adopted by the Group

Amendments to IAS 16	Property, Plant and Equipment: Proceeds before Intended Use
Amendments to IAS 37	Provisions, Contingent Liabilities and Contingent Assets - Onerous contracts – Costs of fulfilling a Contract
Amendments to IFRS 3	Business Combinations - Reference to the Conceptual Framework
Annual Improvements to IFRS Standards 2018-2020 – Amendments to IFRS 1, IFRS 9, IFRS 16, IAS 41	

The application of these new standards, amendments to standards and interpretations does not have material impact on the financial statements of the Group.

Convertible loan

The convertible loan obtained from FiveT Investment Management Ltd. (see Note 5) is classified as a hybrid contract containing a host that is a financial liability and embedded derivatives separated from the host and measured at fair value with all changes in fair value recognized in profit or loss. The embedded financial derivatives are valued by an independent consultant initially and at period end at fair value, applying a simulation-based valuation approach.

The carrying amount of the host contract at initial recognition is the difference between the carrying amount of the hybrid contract and the fair value of the embedded derivatives. The host is then subsequently measured at amortized cost, using the effective interest rate method.

Intangible assets

As of June 30, 2022, Intangible assets amounted to CHF 15,851,501, compared to CHF 14,314,877 as of December 31, 2021. The increase is due to the capitalization of development costs related to the AM-125 program.

Going concern

The Company has incurred recurring losses and negative cash flows from operations since inception and it expects to generate losses from operations for the foreseeable future primarily due to research and development costs for its potential product candidates. The Company believes its cash of CHF 372,647 at June 30, 2022, together with revenues from Bentrico product sales, the receipt of grants, proceeds from the issuance of Common Shares under the A.G.P. Sales Agreement and the 2020 Commitment Purchase Agreement of USD 2.2 million up to the reporting date as well as from further issuances under the A.G.P. Sales Agreement and the 2022 Commitment Purchase Agreement, and the USD 2.2 million upfront payment it expects to receive under the Share Purchase Agreement and Option Agreement, dated October 19, 2022 and amended on November 23, 2022 (as discussed below), will fund the Company's projected operations through the fourth quarter of 2022. We expect that our funding requirements for operations and financial obligations until the end of 2023 will amount to CHF 22.0 to 25.0 million and to CHF 17.0 to 20 million if the convertible loan provided by FiveT will be converted into Common Shares. To the extent that we will be unable to generate sufficient cash proceeds from the planned divestiture or spin-off of our legacy assets or other partnering activities, we will need substantial additional financing to meet these funding requirements both through the fourth quarter of 2022 and thereafter. These factors raise substantial doubt about the Company's ability to continue as a going concern. The financial statements have been prepared on a going concern basis, which contemplates the continuity of normal activities and realisation of assets and settlement of liabilities in the normal course of business. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

As is often the case with drug development companies, the ability of the consolidated entity to continue its development activities as a going concern is dependent upon it deriving sufficient cash from investors, from licensing and partnering activities, in particular the intended divestiture or spin-off of the Company's legacy assets in the fields of inner ear therapeutics and OTC consumer health products, and from other sources of revenue such as grant funding.

On October 21, 2022, the Company announced the sale of (i) 90% of the share capital of its subsidiary Zilentin AG and (ii) an option to purchase the subsidiaries Auris Medical AG, Otolanum AG, Auris Medical Ltd. and Auris Medical Pty Ltd (the "Additional Subsidiaries") – representing the Company's inner ear therapeutic assets – to a European family office (the "Buyer") for a cash consideration of USD 1 million each, for a total of USD 2 million (the "Zilentin Transaction"). Under the terms of the option agreement (the "Option") Zilentin will be entitled to purchase the Additional Subsidiaries for an upfront payment of USD 25. million plus potential milestone royalty payments. The Option may be exercised for 30 days from October 19, 2022 (the "Closing Date"); beyond that period, Zilentin will have a right of first refusal to acquire these companies until year end with the upfront payment increasing by USD 1 million per month. There is no assurance that Buyer will exercise its option, triggering the additional upfront payment of USD 25 million. Due to a delay in the closing of the Zilentin Transaction, the Company and the Buyer agreed on November 23, 2022 to amend their agreement, extending the Closing Date to December 15, 2022 at the latest, increasing the share capital of Zilentin AG to be sold under the transaction from 90 to 100% and raising the amount of the initial payment for the purchase of Zilentin and for the option to purchase the Additional Subsidiaries from USD 2 million to USD 2.2 million.

The directors have considered the cash flow forecasts and the funding requirements of the business and continue to explore grant funding, licensing opportunities and equity investment opportunities in the Company. Apart from the inner ear therapeutic assets, the Company intends to spin off or divest also its OTC consumer health products business, in order to focus on the development of its OligoPhore/SemaPhore RNA delivery platform. At the date of issuing these financial statements, such plans have not yet been realized.

Accordingly, the directors have prepared the financial statements on a going concern basis. Should the above assumptions not prove to be appropriate, there is material uncertainty whether the consolidated entity will continue as a going concern and therefore whether it will realize its assets and extinguish its liabilities in the normal course of business and at the amounts stated in these financial statements.

The Company plans to secure additional capital in the future through equity or debt financings, partnerships, collaborations, or other sources to carry out the Company's planned development activities. If additional capital is not available when required, the Company may need to delay or curtail its operations until such funding is received. Various internal and external factors will affect whether and when the Company's product candidates become approved for marketing and successful commercialization. The regulatory approval and market acceptance of the Company's product candidates, length of time and cost of developing and commercializing these product candidates and/or failure of them at any stage of the approval process will materially affect the Company's financial condition and future operations. Such matters are not within the control of the Company and thus all associated outcomes are uncertain.

Accounting for divestiture

From the date of entering into the agreement for the disposal of Zilentin and the sale of the purchase option for the Additional Subsidiaries, the respective assets and liabilities are classified as held for sale and measured at the lower of carrying amount and fair value less costs to sell. As the agreement was entered into after June 30, 2022, and consequently the criteria for held for sale were met only after the reporting period, the disposal group is presented in the subsequent events and not yet as held for sale in the financial statements. The assets held for sale mainly comprise capitalized development costs related to the AM-125 program, which amounted to CHF 12.0 million as of June 30, 2022.

3. Taxation

The Group's income tax expense recognized in the condensed interim consolidated statement of profit or loss is presented as follows:

	SIX MONTHS ENDED	
	June 30, 2022	June 30, 2021
Current income tax expense	(1,231)	—
Deferred income tax gain	47,316	10,642
Total income tax (expense)/gain	46,085	10,642

The tax effect of taxable temporary differences that give rise to deferred income tax liabilities or to deferred income tax assets as of June 30, 2022 and 2021 is presented as follows:

	<u>June 30, 2022</u>	<u>December 31, 2021</u>
Deferred Tax liabilities		
Intangible assets	(47,590)	(51,914)
Other receivables	(81,184)	(122,449)
Total	(128,774)	(174,363)
Deferred Tax assets		
Net operation loss (NOL)	32,775	31,879
Total	32,775	31,879
Deferred Tax, net	(95,999)	(142,484)

4. Capital and reserves

Share capital

The issued share capital of the Company consisted of:

	Common Shares	
	Number	
	<u>2022</u>	<u>2021</u>
As of January 1	748,213	570,858
Common shares issued	105,000	111,299
Total, as of June 30	853,213	682,157

As of June 30, 2022, the par value of the 853,213 issued shares amounted to CHF 170,643 with a par value of CHF 0.20 for each common share (as of June 30, 2021, the par value of 682,157 issued shares amounted to CHF 136,431 with a par value of CHF 0.20 for each common share).

Equity Offerings

On June 1, 2021, the company completed the acquisition of Trasir Therapeutics Inc. The upfront acquisition price of USD 2.5 million was paid with 38,218 non-registered common shares at the Reference Price of USD 65.40 to the selling shareholders. In addition, 459 non-registered common shares were issued based on the Reference Price to reimburse USD 30,000 in expenses incurred by certain selling Trasir shareholders.

On March 4, 2021, the remaining convertible loan by FiveT in the amount of CHF 604,545 plus accumulated interests of CHF 40,268 was converted into 25,841 common shares at a conversion price of USD 27.00.

On April 23, 2020, the Company entered into a purchase agreement and a Registration Rights Agreement with Lincoln Park Capital Fund, LLC (the “2020 Commitment Purchase Agreement”). Pursuant to the 2020 Commitment Purchase Agreement, LPC agreed to subscribe for up to USD 10,000,000 of our common shares over the 30-month term of the 2020 Commitment Purchase Agreement. Through June 30, 2022, we issued a total of 165,000 of our common shares to LPC for an aggregate amount of USD 2,806,605 under the 2020 Commitment Purchase Agreement. During the six months ended June 30, 2022, we issued 105,000 of our common shares to LPC for an aggregate amount of USD 1,698,450 under the 2020 Commitment Purchase Agreement, and as of the date of this report, we have issued a total of 325,000 of our common shares to LPC for an aggregate amount of USD 4,003,820 under the 2020 Commitment Purchase Agreement.

The remaining 44,872 warrants of the May 2019 Registered Offering were exercised in March 2021.

On November 30, 2018, as amended on April 5, 2019 the Company entered into a sales agreement, as amended (the “A.G.P. Sales Agreement”) with A.G.P./Alliance Global Partners (“A.G.P.”). Pursuant to the terms of the A.G.P. Sales Agreement, the Company may offer and sell its common shares, from time to time through A.G.P. by any method deemed to be an “at-the-market” offering as defined in Rule 415(a)(4) promulgated under the Securities Act. Pursuant to the A.G.P. Sales Agreement, the Company may sell common shares up to a maximum aggregate offering price of USD 25.0 million. As of June 30, 2022, the Company has sold a total of 147,166 common shares for an aggregate offering price of USD 6.7 million pursuant to the A.G.P. Sales Agreement (June 30, 2021: 87,931 common shares for an aggregate offering price of USD 2.9 million), and as of the date of this report, the Company has sold a total of 228,666 common shares for an aggregate offering price of USD 7.8 million pursuant to the A.G.P. Sales Agreement.

As of June 30, 2022 the fair value of the warrants issued in the January 2018 Registered Offering amounted to zero. Therefore, the fair value decreased by the total amount of CHF 1,233 in the first six months of 2022 (fair value as of December 31, 2021: CHF 1,233).

The warrants issued in the February 2017 public offering expired on February 22, 2022, without any warrants having been exercised.

Issue of common shares upon exercise of options

During the six months ended June 30, 2022, no options were exercised.

5. Loans

On February 4, 2022, the Company entered into a convertible loan agreement (the “Loan Agreement”) with FiveT Investment Management Ltd. (the “Lender”), pursuant to which the Lender has agreed to loan to the Company CHF 5,000,000 (the “Loan”), which Loan bears interest at the rate of 10% per annum and matures 12 months from the date (the “Disbursement Date”) the Loan proceeds were disbursed to the Company, which occurred on February 8, 2022. The Company may prepay all or part of the Loan after six months after the Disbursement Date; provided that the Company will pay an amount equal to 130% of the desired prepayment amount. The Lender has the right to convert all or part of the Loan, including accrued and unpaid interest, at its option, into common shares, subject to the limitation that the Lender own no more than 9.99% of the common shares at any time. The conversion price of the Loan into common shares is USD 38.916, which corresponds to 150% of USD 25.944 (the trading volume weighted average price, the “VWAP”, per common share on the NASDAQ stock exchange on the Disbursement Date), converted into Swiss Francs at the midpoint of the interbank exchange rate shown by UBS on the day of receipt of the conversion notice at 4:00 pm Central European Time. The conversion price shall be lowered in the event that the Company raises equity before the maturity date of the Loan through a public or private offering of common shares at an issue price that is at least 10 (ten) % below the VWAP (the “New Issue”), according to the formula set forth in the Loan Agreement (the “Adjustment”). Sales of common shares through equity line or at-the-market programs are not considered New Issues triggering the Adjustment.

As of June 30, 2022, the carrying amount of the host for the unconverted outstanding loan amounted to CHF 4,701,906 and is included in the balance sheet under current liabilities. The fair value of the embedded derivatives amounted to CHF 284 (at initial recognition February 8, 2022: CHF 449,898) included in current derivative financial instruments. A revaluation gain related to fair value measurement of embedded derivatives of CHF 449,614 as well as effective interest expenses and transaction costs of CHF 359,068 in total were recorded in profit or loss.

Due to the COVID-19 pandemic, Swiss banks granted special COVID-19 loans under certain conditions with a guarantee by the Swiss Government. Our Company was eligible for a loan of CHF 50,000, which was granted on March 26, 2020. The loan is interest-free and may be repaid at any time with a maximum term of five years. We repaid the entire loan as of June 16, 2021.

6. Employee benefits

	SIX MONTHS ENDED	
	JUNE 30,	JUNE 30,
	2022	2021
Salaries	1,439,578	812,158
Pension costs	132,784	66,002
Share based compensation expense	180,808	969,739
Other employee costs and social benefits	157,358	257,108
Total employee benefits	1,910,528	2,105,007

Expenditures for employee benefits increased in the first six months ended June 30, 2022 primarily due to increased headcount compared to the first six months ended June 30, 2021. Share based compensation included expense related to employee stock options of CHF 180,808 in the first six months ended June 30, 2022 compared to CHF 159,487 in the first six months ended June 30, 2021. In 2021, share based compensation expense included CHF 810,252 for a share bonus grant related to the strategic repositioning of the Company, including CHF 360,112 for a future share grant contingent on achieving certain results related to the Trasir transaction.

A total of 27,861 options were granted in the six months ended June 30, 2022 (6,862 options in the corresponding six-month period in 2021). The exercise price of the options granted as share based compensation under the Equity Incentive Plan was USD 20.80 (for the six months ended June 30, 2021 USD 70.20). The methodology for computation of share based compensation expense for the period is consistent with the methodology used in 2021.

7. Write-down of inventories

The Company's inventory consists of the product Bentrío, a drug-free nasal spray for protection against airborne viruses and allergens. Bentrío has a limited shelf life, which may affect the salability of the product, and is packaged in various configurations (stock keeping units, "SKUs") for different markets. During the six months ended June 30, 2022, the Company wrote down finished goods inventories by CHF 764,844, based on a management review for any obsolete or slow-moving items. The write-down is included in Cost of Sales in the condensed consolidated statement of profit or loss and other comprehensive income. There were no inventory write-downs recognized during the six months ended June 30, 2021.

8. Revision of Prior Period Financial Statements

In connection with the preparation of our consolidated financial statements, we identified an immaterial error with regard to advance payments for research and development costs and related tax credits for the annual period ended December 31, 2021. The error was mainly related to investigator float payments to a contract research organization. Due to COVID and other reasons, the scheduled services had not been provided by the end of the year and therefore the payments should have been recognized as advance payments and not as R&D expenses. We evaluated the error and determined that the related impact was not material to our financial statements for any prior periods, but that correction of the impact of the error would be significant to our results of operations for the six months ended June 30, 2022. Accordingly, we have revised previously reported financial information for such immaterial error, as previously disclosed in our Annual Report on Form 20-F for the year ended December 31, 2021. A summary of revisions to our previously reported financial statements presented herein for comparative purposes is included below.

Revised consolidated Balance Sheet

	As of December 31, 2021		
	As reported	Adjustment	As revised
Other receivables	917,833	(246,493)	671,340
Prepayments	996,910	578,216	1,575,126
Total current assets	3,759,901	331,723	4,091,624
Total assets	18,838,598	331,723	19,170,321
Accumulated deficit	(176,018,660)	331,723	(175,686,937)
Total shareholders' equity attributable to owners of the company	12,704,528	331,723	13,036,251
Total equity and liabilities	18,838,598	331,723	19,170,321

Revised consolidated Statement of Profit or Loss and Other Comprehensive Loss

	Year ended December 31, 2021		
	As reported	Adjustment	As revised
Other income	460,710	(246,493)	214,217
Research and development	(8,939,037)	578,216	(8,360,821)
Total operating expenses	(15,137,338)	331,723	(14,805,615)
Operating loss	(17,099,793)	331,723	(16,768,070)
Loss before tax	(17,368,546)	331,723	(17,036,823)
Net loss attributable to owners of the Company	(17,390,166)	331,723	(17,058,443)
Total comprehensive loss attributable to owners of the Company	(17,124,410)	331,723	(16,792,687)
Basic and diluted loss per share	(26.26)	0.50	(25.76)

Basic and diluted loss per share as presented in the financial statements as of December 31, 2021, prior to the one-for-twenty reverse share split on October 25, 2022 was CHF 1.31, and the revised number would have been CHF 1.29.

Revised consolidated Statement of Cash Flows

We revised our consolidated statement of cash flows for the year ended December 31, 2021. There was no impact on net cash used in operating activities.

	Year ended December 31, 2021		
	As reported	Adjustment	As revised
Net loss	(17,390,166)	331,723	(17,058,443)
Changes in:			
Trade and other receivables	(586,612)	246,493	(340,119)
Prepayments	(719,321)	(578,216)	(1,297,537)
Cash used in operating activities	(13,627,738)	—	(13,627,738)

9. Loss per share

	SIX MONTHS ENDED	
	June 30, 2022	June 30, 2021
Loss attributable to owners of the Company	(7,306,318)	(6,754,579)
Weighted average number of shares outstanding	774,898	622,741
Basic and diluted loss per share	(9.43)	(10.85)

For the six months ended June 30, 2022 and June 30, 2021 basic and diluted loss per share are calculated based on the weighted average number of shares issued and outstanding and excludes shares to be issued under the stock option plans or for warrants, as they would be anti-dilutive. As of June 30, 2022, the Company had 94,337 options outstanding under its stock option plan. The average number of options outstanding between January 1, 2022 and June 30, 2022 was 74,996 (54,025 for the period between January 1, 2021 and June 30, 2021).

10. Events after the Reporting Period

Loan Agreement

On September 9, 2022 the Company entered into a loan agreement with FiveT Investment Management Ltd., Dominik Lysek and Thomas Meyer (the “Lenders”), pursuant to which the Lenders have agreed to loan to the Company an aggregate of CHF 600,000.00, which loan bears interest at the rate of 5% per annum and matures as of March 31, 2023. The Company agreed to grant to the Lenders warrants (the “Warrants”) to purchase an aggregate 41,667 common shares. The Warrants will be exercisable at an exercise price of CHF 7.20 per share for up to five years from October 1, 2022.

Divestiture of inner ear therapeutic assets

On October 21, 2022, the Company announced the sale of 90% of the share capital of its subsidiary Zilentin AG and of an option to purchase the subsidiaries Auris Medical AG, Otolanum AG, Auris Medical Ltd. and Auris Medical Pty Ltd (the “Additional Subsidiaries”) – representing the Company’s inner ear therapeutic assets – to a European family office (the “Buyer”) for a cash consideration of USD 1 million each. Under the terms of the option agreement (the “Option”) Zilentin will be entitled to purchase the Additional Subsidiaries for an upfront payment of USD 25 million plus up to USD 55 million upon reaching certain clinical and regulatory milestones as well as royalties on revenues generated with products based on Altamira’s RNA delivery technology for certain inner ear targets at a mid-single digit percentage. The Option may be exercised for 30 days from October 19, 2022 (the “Closing Date”); beyond that period, Zilentin will have a right of first refusal to acquire these companies until year end with the upfront payment increasing by USD 1 million per month. Due to a delay in the closing of the Zilentin Transaction, the Company and the Buyer agreed on November 23, 2022 to amend their agreement, extending the Closing Date to December 15, 2022 at the latest, increasing the share capital of Zilentin AG to be sold under the transaction from 90 to 100% and raising the amount of the initial payment for the purchase of Zilentin and for the option to purchase the Additional Subsidiaries from USD 2 million to USD 2.2 million.

Subsequent to June 30, 2022, and after completion of the disposal of Zilentin and the sale of the purchase option for the Additional Subsidiaries, the respective assets and liabilities associated with the purchase option will be classified as held for sale and measured at the lower of carrying amount and fair value less costs to sell. The assets held for sale mainly comprise capitalized development costs related to the AM-125 program, which amounted to CHF 12.0 million as of June 30, 2022.

Reverse share split

On October 25, 2022, the Company effected a one-for-twenty reverse stock split. Following the share split, the Company had 1,074,713 common shares at a par value of CHF 0.20 each outstanding. No fractional common shares were issued as fractional common shares were settled in cash.

Commitment purchase agreement

On November 14, 2022, we entered into a term sheet with LPC for the conclusion of a purchase agreement under which LPC would commit to subscribe for up to USD 10,000,000 of our common shares over the 24-month term of the purchase agreement. The Company and LPC endeavor to enter into a mutually acceptable purchase agreement (the “2022 Commitment Purchase Agreement”) and related documentation within ten business days from the date of the term sheet. The Company shall pay to LPC upon signing of the 2022 Commitment Purchase Agreement a commitment fee at its sole discretion of either (i) USD 250,000 in cash or (ii) issue 50,000 Common Shares and prepare and file as soon as practicable a resale registration statement registering the shares issuable under the 2022 Commitment Purchase Agreement.

Up to 5,714,286 Common Shares
Pre-Funded Warrants to Purchase up to 5,714,286 Common Shares
Common Warrants to Purchase up to 5,714,286 Common Shares



Altamira Therapeutics Ltd.

PRELIMINARY PROSPECTUS

ThinkEquity

, 2023

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 6. Indemnification of Directors and Officers

Section 98 of the Companies Act provides generally that a Bermuda company may indemnify its directors, officers and auditors against any liability which by virtue of any rule of law would otherwise be imposed on them in respect of any negligence, default, breach of duty or breach of trust, except in cases where such liability arises from fraud or dishonesty of which such director, officer or auditor may be guilty in relation to the company. Section 98 further provides that a Bermuda company may indemnify its directors, officers and auditors against any liability incurred by them in defending any proceedings, whether civil or criminal, in which judgment is awarded in their favour or in which they are acquitted or granted relief by the Supreme Court of Bermuda pursuant to section 281 of the Companies Act.

We have adopted provisions in our bye-laws that provide that we shall indemnify our officers and directors in respect of their actions and omissions, except in respect of their fraud or dishonesty. Our bye-laws provide that the shareholders waive all claims or rights of action that they might have, individually or in right of the company, against any of the company's directors or officers for any act or failure to act in the performance of such director's or officer's duties, except in respect of any fraud or dishonesty of such director or officer. Section 98A of the Companies Act permits us to purchase and maintain insurance for the benefit of any officer or director in respect of any loss or liability attaching to him in respect of any negligence, default, breach of duty or breach of trust, whether or not we may otherwise indemnify such officer or director.

We have entered into indemnification agreements with each of the members of our board of directors and executive officers in the form filed as Exhibit 4.23 to our Annual Report on Form 20-F for the fiscal year ended December 31, 2021. The indemnification agreements require us to indemnify our directors and executive officers to the fullest extent permitted by law against liabilities that may arise by reason of their service to the Company, and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified.

Insofar as indemnification for liabilities arising under the Securities Act, may be permitted to directors, officers and controlling persons of the Company, the Company has been advised that, in the opinion of the Securities and Exchange Commission, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable.

Item 7. Recent Sales of Unregistered Securities

On April 23, 2020, the Company entered into a purchase agreement (the "2020 Commitment Purchase Agreement") and a Registration Rights Agreement with Lincoln Park Capital Fund, LLC ("LPC"). Pursuant to the 2020 Commitment Purchase Agreement, LPC agreed to subscribe for up to USD 10,000,000 of our common shares over the 30-month term of the 2020 Commitment Purchase Agreement. We issued a total of 325,000 of our common shares to LPC for an aggregate amount of USD 4,003,820 under the 2020 Commitment Purchase Agreement, and the Purchase Agreement has expired. The issuances were exempt from registration pursuant to Section 4(a)(2) under the Securities Act.

On September 7, 2020, we entered into a convertible loan agreement with FiveT Capital AG ("FiveT") to raise CHF 1,500,000 to fund the initial development of AM-301. Under the convertible loan agreement, FiveT has the right to convert the outstanding principal amount, including interest, into common shares or alternatively into shares of Altamira Medica AG ("Altamira Medica"). On December 1, 2020, a tranche of the convertible loan provided by FiveT in the amount of CHF 895,455 was converted into 36,850 of our common shares at a conversion price of USD 27.00. On March 4, 2021, the remaining convertible loan by FiveT in the amount of CHF 604,545 plus accumulated interests of CHF 40,268 was converted into 25,840 of our common shares at a conversion price of USD 27.00. The issuances were exempt from registration pursuant to Section 4(a)(2) under the Securities Act.

On June 1, 2021, we entered into an Agreement and Plan of Merger (the “Merger Agreement”) through which we acquired 100% of the share capital of privately held Trasir Therapeutics Inc. (“Trasir”). As a result of the merger, the shares of common stock of Trasir immediately prior to the effective time of the merger converted into the right to receive: (i) an aggregate of 38,218 common shares, calculated based on a value of \$2,500,000 divided by the average closing price of the common shares on the 15 trading days preceding the closing date; (ii) contingent on the occurrence of positive results from a subsequent post-closing scientific study (“Positive Results”), the applicable pro rata share of \$1,500,000 of common shares, to be calculated based on the average closing price of the common shares on the 15 trading days preceding the occurrence of Positive Results; and (iii) \$210,000 for expenses incurred in connection with the execution, delivery and performance of the Merger Agreement by certain Trasir shareholders, paid partially in cash and partially in common shares based on the average closing price of the common shares on the 15 trading days preceding the closing date. We have issued an aggregate of 38,677 common shares to Trasir shareholders under the Merger Agreement pursuant to the exemption provided in Section 4(a)(2) under the Securities Act.

On September 9, 2022, the Company entered into a loan agreement with FiveT Investment Management Ltd., Dominik Lysek and Thomas Meyer (the “Lenders”), pursuant to which the Lenders have agreed to loan to the Company an aggregate of CHF 600,000.00 (the “September 2022 Loan Agreement”), which Loan bears interest at the rate of 5% per annum and matures as of March 31, 2023. The Company agreed to grant to the Lenders warrants to purchase an aggregate 41,666 common shares. Such warrants will be exercisable immediately at an exercise price of CHF 7.20 per share, may be exercised up to five years from the date of issuance and may be exercised on a cashless basis in certain circumstances specified therein. The issuance was exempt from registration pursuant to Section 4(a)(2) under the Securities Act.

On December 5, 2022, we entered into a private placement to Lincoln Park Capital Fund, LLC pursuant to which we have the right to sell to LPC up to \$10.0 million of our common shares, subject to certain limitations, from time to time over the 24-month period commencing on the date that a registration statement covering the resale of the shares is declared effective by the SEC. We issued 50,000 Commitment Shares to LPC as consideration for its commitment to purchase our common shares under the Purchase Agreement, and have issued a further 90,000 common shares for net proceeds of \$379,725 through March 7, 2023 under such agreement. In the Purchase Agreement, LPC represented to the Company, among other things, that it was an “accredited investor” (as such term is defined in Rule 501(a) of Regulation D under the Securities Act of 1933, or the Securities Act). The securities were sold by the Company under the Purchase Agreement in reliance upon an exemption from the registration requirements under the Securities Act afforded by Section 4(a)(2) of the Securities Act.

On December 28, 2022, the Company entered into a loan agreement with a private investor (“Private Lender 1”), pursuant to which Private Lender 1 has agreed to loan to the Company an aggregate of CHF 250,000.00 (“December 2022 Loan Agreement 1”), which loan bears interest at the rate of 5% per annum and matures as of May 30, 2023. The Company agreed to grant to Private Lender 1 warrants to purchase an aggregate 33,700 common shares. Such warrants will be exercisable immediately at an exercise price of CHF 4.4512 per share, may be exercised up to five years from the date of issuance and may be exercised on a cashless basis in certain circumstances specified therein. The issuance was exempt from registration pursuant to Section 4(a)(2) under the Securities Act.

On December 28, 2022, the Company entered into a loan agreement with a private investor (“Private Lender 2”), pursuant to which Private Lender 2 has agreed to loan to the Company an aggregate of CHF 100,000.00 (“December 2022 Loan Agreement 2” and, together with December 2022 Loan Agreement 1, the “December 2022 Loan Agreements”), which loan bears interest at the rate of 5% per annum and matures as of May 30, 2023. The Company agreed to grant to Private Lender 2 warrants to purchase an aggregate 13,480 common shares. Such warrants will be exercisable immediately at an exercise price of CHF 4.4512 per share, may be exercised up to five years from the date of issuance and may be exercised on a cashless basis in certain circumstances specified therein. The December 2022 Loan Agreements used the same form of agreement as the September 2022 Loan Agreement and related warrants, other than the applicable principal amount, maturity date and warrant exercise price and amount. The issuance was exempt from registration pursuant to Section 4(a)(2) under the Securities Act.

On February 4, 2022, the Company entered into a convertible loan agreement (the “FiveT Loan”) with FiveT Investment Management Ltd., or FiveT IM, an affiliate of FiveT Capital Holding Ltd., or FiveT, pursuant to which FiveT IM agreed to loan to the Company CHF 5,000,000, which loan bears interest at the rate of 10% per annum. On January 26, 2023 and on or before the date of this prospectus, the Company and FiveT IM entered into (or will enter into, as the case may be) amendments to the FiveT Loan (collectively, the “FiveT Loan Amendment”), which amendment (i) extends the maturity date of the FiveT Loan to March 15, 2023 (which was subsequently amended on March 9, 2023 to March 31, 2023); (ii) provides that the Company may repay amounts owed under the FiveT Loan prior to maturity with no penalty or premium; (iii) provides that in the event of a public or private offering (a “Qualifying Offering”) by the Company of common shares (other than through an equity line or at-the-market program), including this offering, the Company will make a partial repayment of the principal amount of the FiveT Loan comprised of (A) \$1,000,000 in cash and (B) newly issued common shares in an amount equaling 9.9% of the total outstanding common shares post-issuance and after giving effect to such offering, with such common shares being valued for purposes of such repayment at the offering price per common share in such offering (the “Qualifying Offering Price”), upon the closing of the offering (including any warrant coverage provided in such Qualifying Offering); and (iv) provides that upon the closing of the offering, the Company shall have the option to cause FiveT IM to convert the remaining outstanding amount of the FiveT Loan after the repayment described in (iii) above into a pre-funded warrant (the “FiveT Pre-Funded Warrant”), having an exercise price of CHF 0.01 per common share, giving FiveT IM the right to purchase a number of common shares equal to (A) the total remaining outstanding amount of the FiveT Loan divided by (B) the Qualifying Offering Price less CHF 0.01, plus warrant coverage, if any is provided in such Qualifying Offering, on the common shares underlying the FiveT Pre-Funded Warrant. The FiveT Pre-Funded Warrant will provide that until February 21, 2024, FiveT IM may cause the Company to redeem for cash all or portions of the FiveT Pre-Funded Warrant (and related warrant coverage) using up to 40% of the cash proceeds from certain out-licensing or divestiture transactions to the extent completed by the Company, with the amount of the FiveT Pre-Funded Warrant being redeemed equal to (A) the desired redemption amount divided by (B) the Qualifying Offering Price less CHF 0.01. Accordingly, upon the closing of this offering, the Company will repay in cash \$1,000,000 of the principal amount of the FiveT Loan, issue to FiveT IM 890,261 common shares, exercise its option to cause FiveT IM to convert the remaining balance of the FiveT Loan by issuing FiveT Pre-Funded Warrants to purchase an aggregate of 2,577,600 common shares and issue to FiveT IM warrants, identical to the Common Warrants (the “FiveT Common Warrants”) to purchase an aggregate of 3,467,860 common shares. The respective share amounts are based on an assumed combined public offering price of \$1.40 per common share and accompanying Common Warrant, which is the last reported sale price on the Nasdaq Capital Market on March 20, 2023, and assume no sale of Pre-Funded Warrants in this offering.

Item 8. Exhibits

(a) The following documents are filed as part of this registration statement:

See the Exhibit Index attached to this registration statement.

(b) Financial Statement Schedules

None.

Item 9. Undertakings

The undersigned hereby undertakes:

(a) The undersigned registrant hereby undertakes to provide to the underwriter at the closing specified in the underwriting agreements, certificates in such denominations and registered in such names as required by the underwriter to permit prompt delivery to each purchaser.

(b) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the U.S. Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

(c) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the Registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

The following documents are filed as part of this registration statement:

1.1*	Form of Underwriting Agreement
3.1***	Memorandum of Continuance and Corporate Actions of the registrant
3.2***	Bye-laws of the registrant
4.1	Form of Registration Rights Agreement between Auris Medical Holding AG and the shareholders listed therein (incorporated by reference to exhibit 4.1 of the Auris Medical Holding Ltd. registration statement on Form F-1 (Registration no. 333-197105) filed with the Commission on July 21, 2014)
4.2	Warrant Agreement, dated as of March 13, 2018, between Auris Medical Holding AG and Hercules Capital, Inc. (incorporated by reference to exhibit 2.2 of the Auris Medical Holding Ltd. Annual Report on Form 20-F filed with the Commission on March 22, 2018)
4.3	Registration Rights Agreement, dated as of October 10, 2017 between Auris Medical Holding AG and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.3 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on October 11, 2017)
4.4	Purchase Agreement, dated as of May 2, 2018 between Auris Medical Holding AG and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.1 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on May 2, 2018)
4.5	Registration Rights Agreement, dated as of May 2, 2018 between Auris Medical Holding AG and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.2 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on May 2, 2018)
4.6	Form of Pre-Funded Warrant (incorporated by reference to exhibit 4.6 of the Auris Medical Holding Ltd. registration statement on Form F-1 (Registration no. 333-225676) filed with the Commission on July 12, 2018)
4.7	Form of Series A Warrant (incorporated by reference to exhibit 4.7 of the Auris Medical Holding Ltd. registration statement on Form F-1 (Registration no. 333-225676) filed with the Commission on July 12, 2018)
4.8	Form of Series B Warrant (incorporated by reference to exhibit 4.8 of the Auris Medical Holding Ltd. registration statement on Form F-1 (Registration no. 333-225676) filed with the Commission on July 12, 2018)
4.9	Form of Common Warrant (incorporated by reference to exhibit 4.1 of the Auris Medical Holding Ltd. report on Form 6-K filed with the commission on May 16, 2019)
4.10	Form of Pre-Funded Warrant (incorporated by reference to exhibit 4.2 of the Auris Medical Holding Ltd. report on Form 6-K filed with the commission on May 16, 2019)
4.11	Form of Common Warrant Agent Agreement (incorporated by reference to exhibit 4.3 of the Auris Medical Holding Ltd. report on Form 6-K filed with the commission on May 16, 2019)
4.12	Form of Pre-Funded Warrant Agent Agreement (incorporated by reference to exhibit 4.4 of the Auris Medical Holding Ltd. report on Form 6-K filed with the commission on May 16, 2019)
4.13	Purchase Agreement, dated as of April 23, 2020 between Auris Medical Holding Ltd. and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.1 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on April 23, 2020)
4.14	Registration Rights Agreement, dated as of April 23, 2020 between Auris Medical Holding Ltd. and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.2 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on April 23, 2020)
4.15	Form of Warrant, dated as of September 9, 2022 (incorporated by reference to exhibit 4.1 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on September 12, 2022)
4.16	Purchase Agreement, dated as of December 5, 2022 between Altamira Therapeutics Ltd. and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.1 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on December 5, 2022)
4.17	Registration Rights Agreement, dated as of December 5, 2022 between Altamira Therapeutics Ltd. and Lincoln Park Capital Fund, LLC (incorporated by reference to exhibit 10.2 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on December 5, 2022)
4.18***	Form of Pre-Funded Warrant
4.19*	Form of Warrant Agent Agreement for Common Warrants
4.20*	Form of Common Warrant (included in Exhibit 4.19)
5.1*	Opinion of Conyers Dill & Pearman Limited, Bermuda counsel to the Company, as to the validity of the common shares of Altamira Therapeutics Ltd.
5.2*	Opinion of Lowenstein Sandler LLP, U.S. counsel to the Company, as to the validity of the pre-funded warrants and common warrants
10.1#	Collaboration and License Agreement, dated October 21, 2003, between Auris Medical AG and Xigen SA (incorporated by reference to exhibit 10.1 of the Auris Medical Holding Ltd. registration statement on Form F-1 (Registration no. 333-197105) filed with the Commission on June 27, 2014)
10.2#	Co-Ownership and Exploitation Agreement, dated September 29, 2003, between Auris Medical AG and INSERM (incorporated by reference to exhibit 10.2 of the Auris Medical Holding Ltd. registration statement on Form F-1 (Registration no. 333-197105) filed with the Commission on June 27, 2014)
10.3	Form of Indemnification Agreement (incorporated by reference to exhibit 99.4 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on May 11, 2016)
10.4	Equity Incentive Plan, as amended (incorporated by reference to exhibit 99.1 to the Auris Medical Holding Ltd. registration statement on Form S-8 (Registration no. 333-217306) filed with the Commission on April 14, 2017)
10.5	English language translation of Lease Agreement between Auris Medical AG and PSP Management AG (incorporated by reference to exhibit 4.8 of the Auris Medical Holding Ltd. Annual Report on Form 20-F filed with the Commission on March 14, 2017)

10.6	Securities Purchase Agreement, dated as of January 26, 2018 by and among Auris Medical Holding AG and the investors named therein (incorporated by reference to exhibit 10.1 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on January 30, 2018)
10.7	Agreement and Plan of Merger, dated as of February 9, 2018, by and among Auris Medical Holding AG and Auris Medical NewCo Holding AG (incorporated by reference to exhibit 99.3 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on February 9, 2018)
10.8	Share Transfer Agreement, dated as of February 9, 2018 by and between Thomas Meyer and Auris Medical Holding AG (incorporated by reference to exhibit 4.22 of the Auris Medical Holding Ltd. Annual Report on Form 20-F filed with the Commission on March 22, 2018)
10.9	Sales Agreement, dated as of November 30, 2018, between Auris Medical Holding AG and A.G.P./Alliance Global Partners (incorporated by reference to exhibit 1.1 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on November 30, 2018)
10.10	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.23 of the Auris Medical Holding Ltd. registration statement on Form F-1 (Registration No. 333-229465) filed with the Commission on March 20, 2019)
10.11	Amendment No. 1 to Sales Agreement, dated as of April 5, 2019, between Auris Medical Holding Ltd. and A.G.P./Alliance Global Partners (incorporated by reference to exhibit 1.1 of the Auris Medical Holding Ltd. report on Form 6-K filed with the Commission on April 5, 2019)
10.12	Convertible Loan Agreement, dated as of September 7, 2020, by and among Auris Medical Holding Ltd., Altamira Medica AG and FiveT Capital Holding AG (incorporated by reference to exhibit 99.1 of the Auris Medical Holding Ltd. report on Form 6-K furnished with the Commission on September 8, 2020)
10.13†	Agreement and Plan of Merger, dated June 1, 2021, by and among Auris Medical Holding Ltd., Auris Medical Inc., Trasir Therapeutics, Inc., and each of the shareholders of Trasir Therapeutics, Inc. (incorporated by reference to exhibit 2.1 of the Auris Medical Holding Ltd. report on Form 6-K furnished with the Commission on June 3, 2021)
10.14†	Exclusive License Agreement, dated December 11, 2020, by and between Washington University and Trasir Therapeutics, Inc. (incorporated by reference to exhibit 10.1 of the Auris Medical Holding Ltd. report on Form 6-K furnished with the Commission on June 3, 2021)
10.15	Convertible Loan Agreement, dated as of February 4, 2022, by and among Altamira Therapeutics Ltd. and FiveT Investment Management Ltd. (incorporated by reference to exhibit 99.1 of the Altamira Therapeutics Ltd. report on Form 6-K furnished with the Commission on February 8, 2022)
10.16	Licensing & Distribution Agreement, dated February 28, 2022, by and between Altamira Medica Ltd. and Nuance Pharma Limited (incorporated by reference to exhibit 10.1 of the Altamira Therapeutics Ltd. report on Form 6-K furnished with the Commission on March 4, 2022)
10.17	Loan Agreement, dated as of September 9, 2022, by and among Altamira Therapeutics Ltd. and the Lenders (incorporated by reference to exhibit 99.1 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on September 12, 2022)
10.18	Share Purchase Agreement, dated October 19, 2022, by and between Altamira Therapeutics Ltd. and the purchaser party thereto (incorporated by reference to exhibit 99.1 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on October 24, 2022)
10.19	Option Agreement, dated October 19, 2022, by and between Altamira Therapeutics Ltd., Zilentin AG and the other party thereto (incorporated by reference to exhibit 99.2 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on October 24, 2022)
10.20	Amendment No. 1 to Convertible Loan Agreement, between Altamira Therapeutics Ltd. and FiveT Investment Management Ltd. (incorporated by reference to exhibit 99.1 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on January 27, 2023)
10.21	Amendment No. 2 to Convertible Loan Agreement, between Altamira Therapeutics Ltd. and FiveT Investment Management Ltd. (incorporated by reference to exhibit 99.1 of the Altamira Therapeutics Ltd. report on Form 6-K filed with the Commission on March 9, 2023)
10.22*	Form of Amendment No. 3 to Convertible Loan Agreement, between Altamira Therapeutics Ltd. and FiveT Investment Management Ltd.
21.1	List of subsidiaries (incorporated by reference to exhibit 8.1 of the Altamira Therapeutics Ltd. Annual Report on Form 20-F filed with the Commission on April 12, 2022)
23.1*	Consent of Deloitte AG
23.2*	Consent of Conyers Dill & Pearman Limited, Bermuda counsel to the Company (included in Exhibit 5.1)
23.3*	Consent of Lowenstein Sandler LLP, U.S. counsel to the Company (included in Exhibit 5.2)
24.1***	Powers of attorney (included on the signature page of the Company's registration statement on Form F-1 filed with the Commission on February 16, 2023)
107*	Filing Fee Table
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

Confidential treatment requested as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

* Filed herewith.

** To be filed by amendment.

*** Previously filed.

† Certain identified information has been excluded from this Exhibit because it is not material and is the type that the Company treats as private or confidential. The omissions have been indicated by “[***]”.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form F-1 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Hamilton, Bermuda on March 22, 2023.

Altamira Therapeutics Ltd.

By: /s/ Thomas Meyer
Name: Thomas Meyer
Title: Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

By: /s/ Thomas Meyer
Name: Thomas Meyer
Title: Chief Executive Officer and Director
(principal executive officer)
Date: March 22, 2023

By: *
Name: Marcel Gremaud
Title: Chief Financial Officer
(principal financial officer and
principal accounting officer)
Date: March 22, 2023

By: *
Name: Armando Anido
Title: Director
Date: March 22, 2023

By: *
Name: Mats Blom
Title: Director
Date: March 22, 2023

By: *
Name: Alain Munoz
Title: Director
Date: March 22, 2023

By: *
Name: Margrit Schwarz
Title: Director
Date: March 22, 2023

* By: /s/ Thomas Meyer, Attorney-in-Fact

AUTHORIZED REPRESENTATIVE

Pursuant to the requirements of Section 6(a) of the Securities Act of 1933, the undersigned has signed this Registration Statement on Form F-1, solely in the capacity of the duly authorized representative of Altamira Therapeutics Ltd. in the United States, on March 22, 2023.

Altamira Therapeutics, Inc.

By: /s/ Thomas Meyer

Name: Thomas Meyer

Title: President

UNDERWRITING AGREEMENT
between
ALTAMIRA THERAPEUTICS LTD.
and
THINKEQUITY LLC
as Representative of the Several Underwriters

ALTAMIRA THERAPEUTICS LTD.

UNDERWRITING AGREEMENT

New York, New York
[•], 2023

ThinkEquity LLC

As Representative of the several Underwriters named on Schedule 1 attached hereto
17 State Street, 41st Fl
New York, NY 10004

Ladies and Gentlemen:

The undersigned, Altamira Therapeutics Ltd., an exempted company limited by shares incorporated in Bermuda (collectively with its subsidiaries and affiliates, including, without limitation, all entities disclosed or described in the Registration Statement (as hereinafter defined) as being subsidiaries or affiliates of Altamira Therapeutics Ltd., the “Company”), hereby confirms its agreement (this “Agreement”) with ThinkEquity LLC (hereinafter referred to as “you” (including its correlatives) or the “Representative”) and with the other underwriters named on Schedule 1 hereto for which the Representative is acting as representative (the Representative and such other underwriters being collectively called the “Underwriters” or, individually, an “Underwriter”) as follows:

1. Purchase and Sale of Shares.

1.1 Firm Securities.

1.1.1. Nature and Purchase of Firm Securities.

(i) On the basis of the representations and warranties herein contained, but subject to the terms and conditions herein set forth, the Company agrees to issue and sell to the several Underwriters, an aggregate of [•] shares (“Firm Shares”) of the Company’s common shares, par value CHF 0.20 per share (the “Common Stock” and/or pre-funded warrants (each, a “Pre-Funded Warrant”, and in the aggregate, the “Firm Pre-Funded Warrants”) to purchase one share of Common Stock at an exercise price of CHF 0.01 per share (the “Pre-Funded Warrant Shares”) until such time as the Pre-Funded Warrants are exercised in full, subject to adjustment as provided in the Pre-Funded Warrants, and an aggregate of [•] warrants (each a “Warrant”, and in the aggregate, the “Firm Warrants”). The certificate evidencing the Pre-Funded Warrants will be in the form attached hereto as Exhibit A.

(ii) The Underwriters, severally and not jointly, agree to purchase from the Company the number of Firm Shares, Pre-Funded Warrants and Warrants set forth opposite their respective names on Schedule 1 attached hereto and made a part hereof at a purchase price of \$[•] per Firm Share and accompanying Firm Warrant (93.0% of the per Firm Share offering price, allocated as [] per Firm Share and [] per Firm Warrant), \$[] per Firm Pre-Funded Warrant and accompanying Warrant (93.0% of the per Firm Share offering price less CHF 0.01, allocated as [] per Firm Pre-Funded Warrant and [] per Firm Warrant). The Firm Shares, the Firm Pre-Funded Warrants and the Firm Warrants (together, the “Firm Securities”) are to be offered initially to the public at the offering price set forth on the cover page of the Prospectus (as defined in Section 2.1.1 hereof).

1.1.2. Shares Payment and Delivery.

(i) Delivery and payment for the Firm Securities shall be made at 10:00 a.m., Eastern time, on the second (2nd) Business Day following the effective date (the “Effective Date”) of the Registration Statement (as defined in Section 2.1.1 below) (or the third (3rd) Business Day following the Effective Date if the Registration Statement is declared effective after 4:01 p.m., Eastern time) or at such earlier time as shall be agreed upon by the Representative and the Company, at the offices of Blank Rome LLP, 1271 Avenue of the Americas, New York, NY 10020 (“Representative Counsel”), or at such other place (or remotely by facsimile or other electronic transmission) as shall be agreed upon by the Representative and the Company. The hour and date of delivery and payment for the Firm Securities is called the “Closing Date.”

(ii) Payment for the Firm Securities shall be made on the Closing Date by wire transfer in Federal (same day) funds, payable to the order of the Company upon delivery of the certificates (in form and substance satisfactory to the Underwriters) representing the Firm Securities (or through the facilities of the Depository Trust Company (“DTC”)) for the account of the Underwriters. The Firm Securities shall be registered in such name or names and in such authorized denominations as the Representative may request in writing at least two (2) full Business Days prior to the Closing Date. The Company shall not be obligated to sell or deliver the Firm Securities except upon tender of payment by the Representative for all of the Firm Securities. The term “Business Day” means any day other than a Saturday, a Sunday or a legal holiday or a day on which banking institutions are authorized or obligated by law to close in New York, New York.

1.2 Over-allotment Option.

1.2.1. Option Securities. For the purposes of covering any over-allotments in connection with the distribution and sale of the Firm Securities, the Company hereby grants to the Underwriters an option to purchase up to [•] additional shares of Common Stock and/or additional Pre-Funded Warrants and/or Warrants to purchase up to [] additional shares of Common Stock, together representing an aggregate of fifteen percent (15%) of the Firm Securities sold in the offering, from the Company (the “Over-allotment Option”). Such [•] additional shares of Common Stock, the net proceeds of which will be deposited with the Company’s account, are hereinafter referred to as “Option Shares.” Such additional Warrants to purchase [____] shares of Common Stock, the net proceeds of which will be deposited with the Company’s account, are hereinafter referred to as “Option Warrants.” Such additional Pre-Funded Warrants to purchase [____] shares of Common Stock, the net proceeds of which will be deposited with the Company’s account, are hereinafter referred to as “Option Pre-Funded Warrants.” The Option Shares, Option Pre-Funded Warrants and Option Warrants may be referred to herein collectively as the “Option Securities.” The purchase price to be paid per Option Share and per Option Pre-Funded Warrant shall be equal to the price per Firm Share, per Firm Pre-Funded Warrant and per Firm Warrant in Section 1.1.1 hereof, in each case, less \$0.01 per share. The purchase price to be paid per Option Warrant shall be \$0.0093 per Option Warrant. The Firm Securities and the Option Securities are hereinafter referred to together as the “Public Securities.” The Public Securities shall be issued directly by the Company and shall have the rights and privileges described in the Registration Statement, the Pricing Disclosure Package and the Prospectus. The Firm Warrants and Option Warrants, if any, shall be issued pursuant to, and shall have the rights and privileges set forth in, a warrant agreement, dated on or before the Closing Date, between the Company and American Stock Transfer & Trust Company, LLC as warrant agent (the “Warrant Agreement”). The offering and sale of the Public Securities is hereinafter referred to as the “Offering.”

1.2.2. Exercise of Option. The Over-allotment Option granted pursuant to Section 1.2.1 hereof may be exercised by the Representative as to all (at any time) or any part (from time to time) of the Option Securities within 45 days after the Effective Date. The Underwriters shall not be under any obligation to purchase any Option Securities prior to the exercise of the Over-allotment Option. The Over-allotment Option granted hereby may be exercised by the giving of oral notice to the Company from the Representative, which must be confirmed in writing by overnight mail or facsimile or other electronic transmission setting forth the number of Option Securities to be purchased and the date and time for delivery of and payment for the Option Securities (the "Option Closing Date"), which shall not be later than one (1) full Business Day after the date of the notice or such other time as shall be agreed upon by the Company and the Representative, at the offices of Representative Counsel or at such other place (including remotely by facsimile or other electronic transmission) as shall be agreed upon by the Company and the Representative. If such delivery and payment for the Option Securities does not occur on the Closing Date, the Option Closing Date will be as set forth in the notice. Upon exercise of the Over-allotment Option with respect to all or any portion of the Option Securities, subject to the terms and conditions set forth herein, (i) the Company shall become obligated to sell to the Underwriters the number of Option Securities specified in such notice and (ii) each of the Underwriters, acting severally and not jointly, shall purchase that portion of the total number of Option Securities then being purchased as set forth in Schedule 1 opposite the name of such Underwriter.

1.2.3. Payment and Delivery. Payment for the Option Shares shall be made on the Option Closing Date by wire transfer in Federal (same day) funds, payable to the order of the Company upon delivery to you of certificates (in form and substance satisfactory to the Underwriters) representing the Option Shares (or through the facilities of DTC) and/or Warrant or Pre-Funded Warrant for the account of the Underwriters. The Option Securities shall be registered in such name or names and in such authorized denominations as the Representative may request in writing at least one (1) full Business Day prior to the Option Closing Date. The Company shall not be obligated to sell or deliver the Option Securities except upon tender of payment by the Representative for applicable Option Securities. The Option Closing Date may be simultaneous with, but not earlier than, the Closing Date, and in the event that such time and date are simultaneous with the Closing Date, the term "Closing Date" shall refer to the time and date of delivery of the Firm Securities and the Option Securities.

2. Representations and Warranties of the Company. The Company represents and warrants to the Underwriters as of the Applicable Time (as defined below), as of the Closing Date and as of the Option Closing Date, if any, as follows:

2.1 Filing of Registration Statement.

2.1.1. Pursuant to the Securities Act. The Company has filed with the U.S. Securities and Exchange Commission (the "Commission") a registration statement, and an amendment or amendments thereto, on Form F-1 (File No. 333-269823), including any related prospectus or prospectuses, for the registration of the Public Securities under the Securities Act of 1933, as amended (the "Securities Act"), which registration statement and amendment or amendments have been prepared by the Company in all material respects in conformity with the requirements of the Securities Act and the rules and regulations of the Commission under the Securities Act (the "Securities Act Regulations") and will contain all material statements that are required to be stated therein in accordance with the Securities Act and the Securities Act Regulations. Except as the context may otherwise require, such registration statement, as amended, on file with the Commission at the time the registration statement became effective (including the Preliminary Prospectus included in the registration statement, financial statements, schedules, exhibits and all other documents filed as a part thereof or incorporated therein and all information deemed to be a part thereof as of the Effective Date pursuant to paragraph (b) of Rule 430A of the Securities Act Regulations (the "Rule 430A Information")), is referred to herein as the "Registration Statement." If the Company files any registration statement pursuant to Rule 462(b) of the Securities Act Regulations, then after such filing, the term "Registration Statement" shall include such registration statement filed pursuant to Rule 462(b). The Registration Statement has been declared effective by the Commission on the date hereof.

Each prospectus used prior to the effectiveness of the Registration Statement, and each prospectus that omitted the Rule 430A Information that was used after such effectiveness and prior to the execution and delivery of this Agreement, is herein called a “Preliminary Prospectus.” The Preliminary Prospectus, subject to completion, dated [•], 2023, that was included in the Registration Statement immediately prior to the Applicable Time is hereinafter called the “Pricing Prospectus.” The final prospectus in the form first furnished to the Underwriters for use in the Offering is hereinafter called the “Prospectus.” Any reference to the “most recent Preliminary Prospectus” shall be deemed to refer to the latest Preliminary Prospectus included in the Registration Statement.

“Applicable Time” means [TIME] [a.m./p.m.], Eastern time, on the date of this Agreement.

“Issuer Free Writing Prospectus” means any “issuer free writing prospectus,” as defined in Rule 433 of the Securities Act Regulations (“Rule 433”), including without limitation any “free writing prospectus” (as defined in Rule 405 of the Securities Act Regulations) relating to the Public Securities that is (i) required to be filed with the Commission by the Company, (ii) a “road show that is a written communication” within the meaning of Rule 433(d)(8)(i), whether or not required to be filed with the Commission, or (iii) exempt from filing with the Commission pursuant to Rule 433(d)(5)(i) because it contains a description of the Public Securities or of the Offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g).

“Issuer General Use Free Writing Prospectus” means any Issuer Free Writing Prospectus that is intended for general distribution to prospective investors (other than a “*bona fide* electronic road show,” as defined in Rule 433 (the “Bona Fide Electronic Road Show”)), as evidenced by its being specified in Schedule 2-B hereto.

“Issuer Limited Use Free Writing Prospectus” means any Issuer Free Writing Prospectus that is not an Issuer General Use Free Writing Prospectus.

“Pricing Disclosure Package” means any Issuer General Use Free Writing Prospectus issued at or prior to the Applicable Time, the Pricing Prospectus and the information included on Schedule 2-A hereto, all considered together.

2.1.2. Pursuant to the Exchange Act. The Company has filed with the Commission a Form 8-A, as amended (File Number 000-36582), providing for the registration pursuant to Section 12(b) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), of the shares of Common Stock and the Warrants. The registration of the shares of Common Stock and the Warrants under the Exchange Act has been declared effective by the Commission on or prior to the date hereof. The Company has taken no action designed to, or likely to have the effect of, terminating the registration of the shares of Common Stock and the Warrants under the Exchange Act, nor has the Company received any notification that the Commission is contemplating terminating such registration.

2.2 Stock Exchange Listing. The shares of Common Stock and the Warrants have been approved for listing on the NASDAQ Capital Market (the “Exchange”), and the Company has taken no action designed to, or likely to have the effect of, delisting the shares of Common Stock and the Warrants from the Exchange, nor has the Company received any notification that the Exchange is contemplating terminating such listing except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

2.3 No Stop Orders, etc. Neither the Commission nor, to the Company’s knowledge, any state regulatory authority has issued any order preventing or suspending the use of the Registration Statement, any Preliminary Prospectus or the Prospectus or has instituted or, to the Company’s knowledge, threatened to institute, any proceedings with respect to such an order. The Company has complied with each request (if any) from the Commission for additional information.

2.4 Disclosures in Registration Statement.

2.4.1. Compliance with Securities Act and 10b-5 Representation.

(i) Each of the Registration Statement and any post-effective amendment thereto, at the time it became effective, complied in all material respects with the requirements of the Securities Act and the Securities Act Regulations. Each Preliminary Prospectus, including the prospectus filed as part of the Registration Statement as originally filed or as part of any amendment or supplement thereto, and the Prospectus, at the time each was filed with the Commission, complied in all material respects with the requirements of the Securities Act and the Securities Act Regulations. Each Preliminary Prospectus delivered to the Underwriters for use in connection with this Offering and the Prospectus was or will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(ii) Neither the Registration Statement nor any amendment thereto, at its effective time, as of the Applicable Time, at the Closing Date or at any Option Closing Date (if any), contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

(iii) The Pricing Disclosure Package, as of the Applicable Time, at the Closing Date or at any Option Closing Date (if any), did not, does not and will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and each Issuer Limited Use Free Writing Prospectus hereto does not conflict with the information contained in the Registration Statement, any Preliminary Prospectus, the Pricing Prospectus or the Prospectus, and each such Issuer Limited Use Free Writing Prospectus, as supplemented by and taken together with the Pricing Prospectus as of the Applicable Time, did not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to statements made or statements omitted in reliance upon and in conformity with written information furnished to the Company with respect to the Underwriters by the Representative expressly for use in the Registration Statement, the Pricing Prospectus or the Prospectus or any amendment thereof or supplement thereto. The parties acknowledge and agree that such information provided by or on behalf of any Underwriter consists solely of the following disclosure contained in the "Underwriting" section of the Prospectus: [] (the "Underwriters' Information"); and

(iv) Neither the Prospectus nor any amendment or supplement thereto (including any prospectus wrapper), as of its issue date, at the time of any filing with the Commission pursuant to Rule 424(b), at the Closing Date or at any Option Closing Date, included, includes or will include an untrue statement of a material fact or omitted, omits or will omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to the Underwriters' Information.

2.4.2. Disclosure of Agreements. The agreements and documents described in the Registration Statement, the Pricing Disclosure Package and the Prospectus conform in all material respects to the descriptions thereof contained therein and there are no agreements or other documents required by the Securities Act and the Securities Act Regulations to be described in the Registration Statement, the Pricing Disclosure Package and the Prospectus or to be filed with the Commission as exhibits to the Registration Statement, that have not been so described or filed. Each agreement or other instrument (however characterized or described) to which the Company is a party or by which it is or may be bound or affected and (i) that is referred to in the Registration Statement, the Pricing Disclosure Package and the Prospectus, or (ii) is material to the Company's business, has been duly authorized and validly executed by the Company, is in full force and effect in all material respects and is enforceable against the Company and, to the Company's knowledge, the other parties thereto, in accordance with its terms, except (x) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors' rights generally, (y) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws, and (z) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefor may be brought. None of such agreements or instruments has been assigned by the Company, and neither the Company nor, to the Company's knowledge, any other party is in default thereunder and, to the Company's knowledge, no event has occurred that, with the lapse of time or the giving of notice, or both, would constitute a default thereunder. To the best of the Company's knowledge, performance by the Company of the material provisions of such agreements or instruments will not result in a violation of any existing applicable law, rule, regulation, judgment, order or decree of any governmental agency or court, domestic or foreign, having jurisdiction over the Company or any of its assets or businesses (each, a "Governmental Entity"), including, without limitation, those relating to environmental laws and regulations.

2.4.3. Prior Securities Transactions. No securities of the Company have been sold by the Company or by or on behalf of, or for the benefit of, any person or persons controlling, controlled by or under common control with the Company, except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Preliminary Prospectus.

2.4.4. Regulations. The disclosures in the Registration Statement, the Pricing Disclosure Package and the Prospectus concerning the effects of federal, state, local and all foreign regulation on the Offering and the Company's business as currently contemplated are correct in all material respects and no other such regulations are required to be disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus which are not so disclosed.

2.5 Changes After Dates in Registration Statement

2.5.1. No Material Adverse Change. Since the respective dates as of which information is given in the Registration Statement, the Pricing Disclosure Package and the Prospectus, except as otherwise specifically stated therein: (i) there has been no material adverse change in the financial position or results of operations of the Company, nor any change or development that, singularly or in the aggregate, would involve a material adverse change or a prospective material adverse change, in or affecting the condition (financial or otherwise), results of operations, business, assets or prospects of the Company (a "Material Adverse Change"); (ii) there have been no material transactions entered into by the Company, other than as contemplated pursuant to this Agreement; and (iii) no officer or director of the Company has resigned from any position with the Company.

2.5.2. Recent Securities Transactions, etc. Subsequent to the respective dates as of which information is given in the Registration Statement, the Pricing Disclosure Package and the Prospectus, and except as may otherwise be indicated or contemplated herein or disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company has not: (i) issued any securities or incurred any liability or obligation, direct or contingent, for borrowed money; or (ii) declared or paid any dividend or made any other distribution on or in respect to its share capital.

2.6 Independent Accountants. To the knowledge of the Company, Deloitte AG (the "Auditor"), whose report is filed with the Commission as part of the Registration Statement, the Pricing Disclosure Package and the Prospectus, is an independent registered public accounting firm as required by the Securities Act and the Securities Act Regulations and the Public Company Accounting Oversight Board. The Auditor has not, during the periods covered by the financial statements included in the Registration Statement, the Pricing Disclosure Package and the Prospectus, provided to the Company any non-audit services, as such term is used in Section 10A(g) of the Exchange Act.

2.7 Financial Statements, etc. The financial statements, including the notes thereto and supporting schedules included in the Registration Statement, the Pricing Disclosure Package and the Prospectus, fairly present the financial position and the results of operations of the Company at the dates and for the periods to which they apply; and such financial statements have been prepared in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board (“IFRS”), consistently applied throughout the periods involved (provided that unaudited interim financial statements are subject to year-end audit adjustments that are not expected to be material in the aggregate and do not contain all footnotes required by IFRS); and the supporting schedules included in the Registration Statement present fairly the information required to be stated therein. Except as included therein, no historical or pro forma financial statements are required to be included in the Registration Statement, the Pricing Disclosure Package or the Prospectus under the Securities Act or the Securities Act Regulations. The pro forma and pro forma as adjusted financial information and the related notes, if any, included in the Registration Statement, the Pricing Disclosure Package and the Prospectus have been properly compiled and prepared in accordance with the applicable requirements of the Securities Act and the Securities Act Regulations and present fairly the information shown therein, and the assumptions used in the preparation thereof are reasonable and the adjustments used therein are appropriate to give effect to the transactions and circumstances referred to therein. All disclosures contained in the Registration Statement, the Pricing Disclosure Package or the Prospectus regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission), if any, comply with Regulation G of the Exchange Act and Item 10 of Regulation S-K of the Securities Act, to the extent applicable. Each of the Registration Statement, the Pricing Disclosure Package and the Prospectus discloses all material off-balance sheet transactions, arrangements, obligations (including contingent obligations), and other relationships of the Company with unconsolidated entities or other persons that may have a material current or future effect on the Company’s financial condition, changes in financial condition, results of operations, liquidity, capital expenditures, capital resources, or significant components of revenues or expenses. Except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, (a) neither the Company nor any of its direct and indirect subsidiaries, including each entity disclosed or described in the Registration Statement, the Pricing Disclosure Package and the Prospectus as being a subsidiary of the Company (each, a “Subsidiary” and, collectively, the “Subsidiaries”), has incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions other than in the ordinary course of business, (b) the Company has not declared or paid any dividends or made any distribution of any kind with respect to its share capital, (c) there has not been any change in the share capital of the Company or any of its Subsidiaries, or, other than in the course of business, any grants under any stock compensation plan, and (d) there has not been any material adverse change in the Company’s long-term or short-term debt.

2.8 Authorized Capital; Options, etc. The Company had, at the date or dates indicated in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the duly authorized, issued and outstanding capitalization as set forth therein. Based on the assumptions stated in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company will have on the Closing Date the adjusted share capitalization set forth therein. Except as set forth in, or contemplated by, the Registration Statement, the Pricing Disclosure Package and the Prospectus, on the Effective Date, as of the Applicable Time and on the Closing Date and any Option Closing Date, there will be no stock options, warrants, or other rights to purchase or otherwise acquire any authorized, but unissued shares of Common Stock of the Company or any security convertible or exercisable into shares of Common Stock of the Company, or any contracts or commitments to issue or sell shares of Common Stock or any such options, warrants, rights or convertible securities.

2.9 Valid Issuance of Securities, etc.

2.9.1. Outstanding Securities. All issued and outstanding securities of the Company issued prior to the transactions contemplated by this Agreement have been duly authorized and validly issued and are fully paid and non-assessable; the holders thereof have no rights of rescission with respect thereto, and are not subject to personal liability by reason of being such holders; and none of such securities were issued in violation of the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company. The authorized shares of Common Stock conform in all material respects to all statements relating thereto contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus. The offers and sales of the outstanding shares of Common Stock were at all relevant times either registered under the Securities Act and the applicable state securities or “blue sky” laws or, based in part on the representations and warranties of the purchasers of such Shares, exempt from such registration requirements.

2.9.2. Securities Sold Pursuant to this Agreement. The Public Securities and the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants and the Warrants (the “Underlying Shares”) have been duly authorized for issuance and sale and, when issued and paid for pursuant to the terms of this Agreement and the Warrant Agreement and the Warrants, or the Pre-Funded Warrants, as applicable, will be validly issued, fully paid and non-assessable; the holders thereof are not and will not be subject to personal liability by reason of being such holders; the Public Securities and Underlying Securities are not and will not be subject to the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company; and all corporate action required to be taken for the authorization, issuance and sale of the Public Securities and Underlying Shares has been duly and validly taken. The Public Securities conform in all material respects to all statements with respect thereto contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus. All corporate action required to be taken for the authorization, issuance and sale of the Pre-Funded Warrant and the Warrant has been duly and validly taken; the Underlying Shares have been duly authorized and reserved for issuance by all necessary corporate action on the part of the Company; the holders thereof are not and will not be subject to personal liability by reason of being such holders; and such shares of Common Stock are not and will not be subject to the preemptive rights of any holders of any security of the Company or similar contractual rights granted by the Company.

2.10 Registration Rights of Third Parties. Except as set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus, no holders of any securities of the Company or any rights exercisable for or convertible or exchangeable into securities of the Company have the right to require the Company to register any such securities of the Company under the Securities Act or to include any such securities in a registration statement to be filed by the Company.

2.11 Validity and Binding Effect of Agreements. This Agreement, the Pre-Funded Warrants and the Warrant Agreement have been duly and validly authorized by the Company, and, when executed and delivered, will constitute, the valid and binding agreements of the Company, enforceable against the Company in accordance with their respective terms, except: (i) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors’ rights generally; (ii) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws; and (iii) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefor may be brought.

2.12 No Conflicts, etc. The execution, delivery and performance by the Company of this Agreement, the Pre-Funded Warrants, the Warrant Agreement and all ancillary documents, the consummation by the Company of the transactions herein and therein contemplated and the compliance by the Company with the terms hereof and thereof do not and will not, with or without the giving of notice or the lapse of time or both: (i) result in a material breach of, or conflict with any of the terms and provisions of, or constitute a material default under, or result in the creation, modification, termination or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any agreement or instrument to which the Company is a party; (ii) result in any violation of the provisions of the Company's Memorandum of Continuance (as the same may be amended or restated from time to time, the "Charter") or the bye-laws of the Company; or (iii) violate any existing applicable law, rule, regulation, judgment, order or decree of any Governmental Entity as of the date hereof.

2.13 No Defaults; Violations. No material default exists in the due performance and observance of any term, covenant or condition of any material license, contract, indenture, mortgage, deed of trust, note, loan or credit agreement, or any other agreement or instrument evidencing an obligation for borrowed money, or any other material agreement or instrument to which the Company is a party or by which the Company may be bound or to which any of the properties or assets of the Company is subject. The Company is not in violation of any term or provision of its Charter or bye-laws, or in violation of any franchise, license, permit, applicable law, rule, regulation, judgment or decree of any Governmental Entity.

2.14 Corporate Power; Licenses; Consents.

2.14.1. Conduct of Business. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company has all requisite corporate power and authority, and has all necessary authorizations, approvals, orders, licenses, certificates and permits of and from all governmental regulatory officials and bodies that it needs as of the date hereof to conduct its business purpose as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

2.14.2. Transactions Contemplated Herein. The Company has all corporate power and authority to enter into this Agreement, the Pre-Funded Warrants and the Warrant Agreement and to carry out the provisions and conditions hereof, and all consents, authorizations, approvals and orders required in connection therewith have been obtained. No consent, authorization or order of, and no filing with, any court, government agency or other body is required for the valid issuance, sale and delivery of the Public Securities and the consummation of the transactions and agreements contemplated by this Agreement, the Pre-Funded Warrants and the Warrant Agreement and as contemplated by the Registration Statement, the Pricing Disclosure Package and the Prospectus, except with respect to applicable federal and state securities laws and the rules and regulations of the Financial Industry Regulatory Authority, Inc. ("FINRA").

2.15 D&O Questionnaires. To the Company's knowledge, all information contained in the questionnaires (the "Questionnaires") completed by each of the Company's directors and officers immediately prior to the Offering (the "Insiders") as supplemented by all information concerning the Company's directors, officers and principal shareholders as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, as well as in the Lock-Up Agreement (as defined in Section 2.24 below), provided to the Underwriters, is true and correct in all material respects and the Company has not become aware of any information which would cause the information disclosed in the Questionnaires to become materially inaccurate and incorrect.

2.16 Litigation; Governmental Proceedings. There is no action, suit, proceeding, inquiry, arbitration, investigation, litigation or governmental proceeding pending or, to the Company's knowledge, threatened against, or involving the Company or, to the Company's knowledge, any executive officer or director which has not been disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus or in connection with the Company's listing application for the listing of the Public Securities on the Exchange.

2.17 Good Standing. The Company is duly incorporated and is validly existing as a company limited by shares and is in good standing under the laws of Bermuda as of the date hereof, and is duly qualified to do business and is in good standing in each other jurisdiction in which its ownership or lease of property or the conduct of business requires such qualification, except where the failure to qualify, singularly or in the aggregate, would not have or reasonably be expected to result in a Material Adverse Change.

2.18 Insurance. The Company carries or is entitled to the benefits of insurance, with reputable insurers, in such amounts and covering such risks which the Company believes are adequate, including, but not limited to, directors and officers insurance coverage at least equal to \$1,000,000 and all such insurance is in full force and effect. The Company has no reason to believe that it will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not result in a Material Adverse Change.

2.19 Transactions Affecting Disclosure to FINRA.

2.19.1. Finder's Fees. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, there are no claims, payments, arrangements, agreements or understandings relating to the payment of a finder's, consulting or origination fee by the Company or any Insider with respect to the sale of the Public Securities hereunder or any other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its shareholders that may affect the Underwriters' compensation, as determined by FINRA.

2.19.2. Payments Within Twelve (12) Months. Except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company has not made any direct or indirect payments (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the twelve (12) months prior to the Effective Date, other than the payment to the Underwriters as provided hereunder in connection with the Offering.

2.19.3. Use of Proceeds. None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein.

2.19.4. FINRA Affiliation. There is no (i) officer or director of the Company, (ii) beneficial owner of 5% or more of any class of the Company's securities or (iii) beneficial owner of the Company's unregistered equity securities which were acquired during the 180-day period immediately preceding the filing of the Registration Statement that is an affiliate or associated person of a FINRA member participating in the Offering (as determined in accordance with the rules and regulations of FINRA).

2.19.5. Information. All information provided by the Company in its FINRA questionnaire to Representative Counsel and, to the Company's knowledge, all information provided by each of the Company's officers, directors and 50% or greater shareholders, in their respective FINRA questionnaire to Representative Counsel, in each case, specifically for use by Representative Counsel in connection with its Public Offering System filings (and related disclosure) with FINRA is true, correct and complete in all material respects.

2.20 Foreign Corrupt Practices Act. None of the Company and its Subsidiaries or, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company and its Subsidiaries or any other person acting on behalf of the Company and its Subsidiaries, has, directly or indirectly, given or agreed to give any money, gift or similar benefit (other than legal price concessions to customers in the ordinary course of business) to any customer, supplier, employee or agent of a customer or supplier, or official or employee of any governmental agency or instrumentality of any government (domestic or foreign) or any political party or candidate for office (domestic or foreign) or other person who was, is, or may be in a position to help or hinder the business of the Company (or assist it in connection with any actual or proposed transaction) that (i) might subject the Company to any damage or penalty in any civil, criminal or governmental litigation or proceeding, (ii) if not given in the past, might have had a Material Adverse Change or (iii) if not continued in the future, might adversely affect the assets, business, operations or prospects of the Company. The Company has taken reasonable steps to ensure that its accounting controls and procedures are sufficient to cause the Company to comply in all material respects with the Foreign Corrupt Practices Act of 1977, as amended.

2.21 Compliance with OFAC. None of the Company and its Subsidiaries or, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company and its Subsidiaries or any other person acting on behalf of the Company and its Subsidiaries, is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury ("OFAC"), and the Company will not, directly or indirectly, use the proceeds of the Offering hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

2.22 Money Laundering Laws. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any Governmental Entity (collectively, the "Money Laundering Laws"); and no action, suit or proceeding by or before any Governmental Entity involving the Company with respect to the Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

2.23 Officers' Certificate. Any certificate signed by any duly authorized officer of the Company and delivered to you or to Representative Counsel shall be deemed a representation and warranty by the Company to the Underwriters as to the matters covered thereby.

2.24 Lock-Up Agreements. Schedule 3 hereto contains a complete and accurate list of the Company's officers, directors and each owner of at least 5% of the Company's outstanding shares of Common Stock (or securities convertible or exercisable into shares of Common Stock) (collectively, the "Lock-Up Parties"). The Company has caused each of the Lock-Up Parties to deliver to the Representative an executed Lock-Up Agreement, in the form attached hereto as Exhibit B (the "Lock-Up Agreement"), prior to the execution of this Agreement.

2.25 Subsidiaries. All direct and indirect Subsidiaries of the Company are duly organized and in good standing under the laws of the place of organization or incorporation, and each Subsidiary is in good standing in each jurisdiction in which its ownership or lease of property or the conduct of business requires such qualification, except where the failure to qualify would not have a material adverse effect on the assets, business or operations of the Company taken as a whole. The Company's ownership and control of each Subsidiary is as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

2.26 Related Party Transactions. There are no business relationships or related party transactions involving the Company or any other person required to be described in the Registration Statement, the Pricing Disclosure Package and the Prospectus that have not been described as required.

2.27 Board of Directors. The Board of Directors of the Company is comprised of the persons set forth under the heading of the Pricing Prospectus and the Prospectus captioned “Management.” The qualifications of the persons serving as board members and the overall composition of the board comply with the Exchange Act, the Exchange Act Regulations, the Sarbanes-Oxley Act of 2002 and the rules promulgated thereunder (the “Sarbanes-Oxley Act”) applicable to the Company and the listing rules of the Exchange. At least one member of the Audit Committee of the Board of Directors of the Company qualifies as an “audit committee financial expert,” as such term is defined under Regulation S-K and the listing rules of the Exchange. In addition, at least a majority of the persons serving on the Board of Directors qualify as “independent,” as defined under the listing rules of the Exchange.

2.28 Sarbanes-Oxley Compliance.

2.28.1. Disclosure Controls. The Company has developed and currently maintains disclosure controls and procedures that will comply with Rule 13a-15 or 15d-15 under the Exchange Act Regulations, and such controls and procedures are effective to ensure that all material information concerning the Company will be made known on a timely basis to the individuals responsible for the preparation of the Company’s Exchange Act filings and other public disclosure documents.

2.28.2. Compliance. The Company is, or at the Applicable Time and on the Closing Date will be, in material compliance with the provisions of the Sarbanes-Oxley Act applicable to it, and has implemented or will implement such programs and taken reasonable steps to ensure the Company’s future compliance (not later than the relevant statutory and regulatory deadlines therefor) with all of the material provisions of the Sarbanes-Oxley Act.

2.29 Accounting Controls. The Company and its Subsidiaries maintain systems of “internal control over financial reporting” (as defined under Rules 13a-15 and 15d-15 under the Exchange Act Regulations) that comply with the requirements of the Exchange Act and have been designed by, or under the supervision of, their respective principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS, including, but not limited to, internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management’s general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with IFRS and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management’s general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company is not aware of any material weaknesses in its internal controls. The Company’s auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting which are known to the Company’s management and that have adversely affected or are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and (ii) any fraud known to the Company’s management, whether or not material, that involves management or other employees who have a significant role in the Company’s internal controls over financial reporting.

2.30 No Investment Company Status. The Company is not and, after giving effect to the Offering and the application of the proceeds thereof as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, will not be, required to register as an “investment company,” as defined in the Investment Company Act of 1940, as amended.

2.31 No Labor Disputes. No labor dispute with the employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is imminent.

2.32 Intellectual Property Rights. Except as would not reasonably be expected to result, individually or in the aggregate, in a Material Adverse Change, the Company and each of its Subsidiaries owns or possesses or has valid rights to use all patents, patent applications, trademarks, service marks, trade names, trademark registrations, service mark registrations, copyrights, licenses, inventions, trade secrets and similar rights (“Intellectual Property Rights”) necessary for the conduct of the business of the Company and its Subsidiaries as currently carried on and as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus. To the knowledge of the Company, no action or use by the Company or any of its Subsidiaries necessary for the conduct of its business as currently carried on and as described in the Registration Statement and the Prospectus will involve or give rise to any infringement of, or license or similar fees for, any Intellectual Property Rights of others. Neither the Company nor any of its Subsidiaries has received any notice alleging any such infringement, fee or conflict with asserted Intellectual Property Rights of others, except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus. Except as would not reasonably be expected to result, individually or in the aggregate, in a Material Adverse Change (A) to the knowledge of the Company, there is no infringement, misappropriation or violation by third parties of any of the Intellectual Property Rights owned by the Company; (B) there is no pending or, to the knowledge of the Company, threatened action, suit, proceeding or claim by others challenging the rights of the Company in or to any such Intellectual Property Rights, and the Company is unaware of any facts which would form a reasonable basis for any such claim, that would, individually or in the aggregate, together with any other claims in this Section 2.32, reasonably be expected to result in a Material Adverse Change; (C) the Intellectual Property Rights owned by the Company and, to the knowledge of the Company, the Intellectual Property Rights licensed to the Company have not been adjudged by a court of competent jurisdiction invalid or unenforceable, in whole or in part, and there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others challenging the validity or scope of any such Intellectual Property Rights, and the Company is unaware of any facts which would form a reasonable basis for any such claim that would, individually or in the aggregate, together with any other claims in this Section 2.32, reasonably be expected to result in a Material Adverse Change; (D) there is no pending or, to the Company’s knowledge, threatened action, suit, proceeding or claim by others that the Company infringes, misappropriates or otherwise violates any Intellectual Property Rights or other proprietary rights of others, the Company has not received any written notice of such claim and the Company is unaware of any other facts which would form a reasonable basis for any such claim that would, individually or in the aggregate, together with any other claims in this Section 2.32, reasonably be expected to result in a Material Adverse Change; and (E) to the Company’s knowledge, no employee of the Company is in or has ever been in violation in any material respect of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee’s employment with the Company, or actions undertaken by the employee while employed with the Company and could reasonably be expected to result, individually or in the aggregate, in a Material Adverse Change. To the Company’s knowledge, all material technical information developed by and belonging to the Company which has not been patented has been kept confidential. The Company is not a party to or bound by any options, licenses or agreements with respect to the Intellectual Property Rights of any other person or entity that are required to be set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus and are not described therein. The Registration Statement, the Pricing Disclosure Package and the Prospectus contain in all material respects the same description of the matters set forth in the preceding sentence. None of the technology employed by the Company has been obtained or is being used by the Company in violation of any contractual obligation binding on the Company or, to the Company’s knowledge, any of its officers, directors or employees, or otherwise in violation of the rights of any persons except as described in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

2.33 Taxes. Each of the Company and its Subsidiaries has filed all returns (as hereinafter defined) required to be filed with taxing authorities prior to the date hereof or has duly obtained extensions of time for the filing thereof. Each of the Company and its Subsidiaries has paid all taxes (as hereinafter defined) shown as due on such returns that were filed and has paid all taxes imposed on or assessed against the Company or such respective Subsidiary. The provisions for taxes payable, if any, shown on the financial statements filed with or as part of the Registration Statement are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. Except as disclosed in writing to the Underwriters, (i) no issues have been raised (and are currently pending) by any taxing authority in connection with any of the returns or taxes asserted as due from the Company or its Subsidiaries, and (ii) no waivers of statutes of limitation with respect to the returns or collection of taxes have been given by or requested from the Company or its Subsidiaries. The term “taxes” means all federal, state, local, foreign and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments or charges of any kind whatever, together with any interest and any penalties, additions to tax or additional amounts with respect thereto. The term “returns” means all returns, declarations, reports, statements and other documents required to be filed in respect to taxes.

2.34 ERISA Compliance. The Company and any “employee benefit plan” (as defined under the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, “ERISA”)) established or maintained by the Company or its “ERISA Affiliates” (as defined below) are in compliance in all material respects with ERISA. “ERISA Affiliate” means, with respect to the Company, any member of any group of organizations described in Sections 414(b),(c),(m) or (o) of the Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the “Code”) of which the Company is a member. No “reportable event” (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any “employee benefit plan” established or maintained by the Company or any of its ERISA Affiliates. No “employee benefit plan” established or maintained by the Company or any of its ERISA Affiliates, if such “employee benefit plan” were terminated, would have any “amount of unfunded benefit liabilities” (as defined under ERISA). Neither the Company nor any of its ERISA Affiliates has incurred or reasonably expects to incur any material liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any “employee benefit plan” or (ii) Sections 412, 4971, 4975 or 4980B of the Code. Each “employee benefit plan” established or maintained by the Company or any of its ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code is so qualified and, to the knowledge of the Company, nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification.

2.35 Compliance with Laws. The Company: (A) is and at all times has been in compliance with all statutes, rules, or regulations applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, marketing, labeling, promotion, sale, offer for sale, storage, import, export or disposal of any product manufactured or distributed by the Company (“Applicable Laws”), except as could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Change; (B) has not received any warning letter, untitled letter or other correspondence or notice from any other governmental authority alleging or asserting noncompliance with any Applicable Laws or any licenses, certificates, approvals, clearances, authorizations, permits and supplements or amendments thereto required by any such Applicable Laws (“Authorizations”); (C) possesses all material Authorizations and such Authorizations are valid and in full force and effect and are not in material violation of any term of any such Authorizations; (D) has not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any governmental authority or third party alleging that any product operation or activity is in violation of any Applicable Laws or Authorizations and has no knowledge that any such governmental authority or third party is considering any such claim, litigation, arbitration, action, suit, investigation or proceeding; (E) has not received notice that any governmental authority has taken, is taking or intends to take action to limit, suspend, modify or revoke any Authorizations and has no knowledge that any such governmental authority is considering such action; (F) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Authorizations and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete and correct on the date filed (or were corrected or supplemented by a subsequent submission); and (G) has not, either voluntarily or involuntarily, initiated, conducted, or issued or caused to be initiated, conducted or issued, any recall, market withdrawal or replacement, safety alert, post-sale warning, “dear doctor” letter, or other notice or action relating to the alleged lack of safety or efficacy of any product or any alleged product defect or violation and, to the Company’s knowledge, no third party has initiated, conducted or intends to initiate any such notice or action.

2.36 Ineligible Issuer. At the time of filing the Registration Statement and any post-effective amendment thereto, at the time of effectiveness of the Registration Statement and any amendment thereto, at the earliest time thereafter that the Company or another offering participant made a bona fide offer (within the meaning of Rule 164(h)(2) of the Securities Act Regulations) of the Public Securities and at the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405, without taking account of any determination by the Commission pursuant to Rule 405 that it is not necessary that the Company be considered an ineligible issuer.

2.37 Real Property. Except as set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus, the Company and its Subsidiaries have good and marketable title in fee simple to, or have valid rights to lease or otherwise use, all items of real or personal property which are material to the business of the Company and its Subsidiaries taken as a whole, in each case free and clear of all liens, encumbrances, security interests, claims and defects that do not, singly or in the aggregate, materially affect the value of such property and do not interfere with the use made and proposed to be made of such property by the Company or its Subsidiaries; and all of the leases and subleases material to the business of the Company and its subsidiaries, considered as one enterprise, and under which the Company or any of its Subsidiaries holds properties described in the Registration Statement, the Pricing Disclosure Package and the Prospectus, are in full force and effect, and neither the Company nor any Subsidiary has received any notice of any material claim of any sort that has been asserted by anyone adverse to the rights of the Company or any Subsidiary under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company or such Subsidiary to the continued possession of the leased or subleased premises under any such lease or sublease.

2.38 Contracts Affecting Capital. There are no transactions, arrangements or other relationships between and/or among the Company, any of its affiliates (as such term is defined in Rule 405 of the Securities Act Regulations) and any unconsolidated entity, including, but not limited to, any structured finance, special purpose or limited purpose entity that could reasonably be expected to materially affect the Company’s or its Subsidiaries’ liquidity or the availability of or requirements for their capital resources required to be described or incorporated by reference in the Registration Statement, the Pricing Disclosure Package and the Prospectus which have not been described or incorporated by reference as required.

2.39 Loans to Directors or Officers. There are no outstanding loans, advances (except normal advances for business expenses in the ordinary course of business) or guarantees or indebtedness by the Company or its Subsidiaries to or for the benefit of any of the officers or directors of the Company, its Subsidiaries or any of their respective family members, except as disclosed in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

2.40 [RESERVED].

2.41 Industry Data. The statistical and market-related data included in each of the Registration Statement, the Pricing Disclosure Package and the Prospectus are based on or derived from sources that the Company reasonably and in good faith believes are reliable and accurate or represent the Company's good faith estimates that are made on the basis of data derived from such sources.

2.42 [RESERVED].

2.43 Testing-the-Waters Communications. The Company has not (i) alone engaged in any Testing-the-Waters Communications, other than Testing-the-Waters Communications with the written consent of the Representative and with entities that are qualified institutional buyers within the meaning of Rule 144A under the Securities Act or institutions that are accredited investors within the meaning of Rule 501 under the Securities Act and (ii) authorized anyone other than the Representative to engage in Testing-the-Waters Communications. The Company confirms that the Representative has been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications other than those listed on Schedule 2-C hereto. "Written Testing-the-Waters Communication" means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Securities Act.

2.44 Electronic Road Show. The Company has made available a Bona Fide Electronic Road Show in compliance with Rule 433(d)(8)(ii) of the Securities Act Regulations such that no filing of any "road show" (as defined in Rule 433(h) of the Securities Act Regulations) is required in connection with the Offering.

2.45 Margin Securities. The Company owns no "margin securities" as that term is defined in Regulation U of the Board of Governors of the Federal Reserve System (the "Federal Reserve Board"), and none of the proceeds of Offering will be used, directly or indirectly, for the purpose of purchasing or carrying any margin security, for the purpose of reducing or retiring any indebtedness which was originally incurred to purchase or carry any margin security or for any other purpose which might cause any of the shares of Common Stock to be considered a "purpose credit" within the meanings of Regulation T, U or X of the Federal Reserve Board.

2.46 Foreign Private Issuer. The Company is a "foreign private issuer" within the meaning of Rule 405 under the Securities Act.

Any certificate signed by or on behalf of the Company and delivered to the Representative or counsel for the Underwriters in connection with the Offering shall be deemed to a representation and warranty by the Company as to the matters covered therein to each Underwriter.

3. Covenants of the Company. The Company covenants and agrees as follows:

3.1 Amendments to Registration Statement. The Company shall deliver to the Representative, prior to filing, any amendment or supplement to the Registration Statement or Prospectus proposed to be filed after the Effective Date and not file any such amendment or supplement to which the Representative shall reasonably object in writing.

3.2 Federal Securities Laws.

3.2.1. Compliance. The Company, subject to Section 3.2.2, shall comply with the requirements of Rule 430A of the Securities Act Regulations, and will notify the Representative promptly, and confirm the notice in writing, (i) when any post-effective amendment to the Registration Statement shall become effective or any amendment or supplement to the Prospectus shall have been filed; (ii) of the receipt of any comments from the Commission; (iii) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus or for additional information; (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any post-effective amendment or of any order preventing or suspending the use of any Preliminary Prospectus or the Prospectus, or of the suspension of the qualification of the Public Securities and the Pre-Funded Warrants for offering or sale in any jurisdiction, or of the initiation or threatening of any proceedings for any of such purposes or of any examination pursuant to Section 8(d) or 8(e) of the Securities Act concerning the Registration Statement and (v) if the Company becomes the subject of a proceeding under Section 8A of the Securities Act in connection with the Offering of the Public Securities or Pre-Funded Warrants. The Company shall effect all filings required under Rule 424(b) of the Securities Act Regulations, in the manner and within the time period required by Rule 424(b) (without reliance on Rule 424(b)(8)), and shall take such steps as it deems necessary to ascertain promptly whether the form of prospectus transmitted for filing under Rule 424(b) was received for filing by the Commission and, in the event that it was not, it will promptly file such prospectus. The Company shall use its best efforts to prevent the issuance of any stop order, prevention or suspension and, if any such order is issued, to obtain the lifting thereof at the earliest possible moment.

3.2.2. Continued Compliance. The Company shall comply with the Securities Act, the Securities Act Regulations, the Exchange Act and the Exchange Act Regulations so as to permit the completion of the distribution of the Public Securities as contemplated in this Agreement, the Pre-Funded Warrants, the Warrant Agreement and in the Registration Statement, the Pricing Disclosure Package and the Prospectus. If at any time when a prospectus relating to the Public Securities is (or, but for the exception afforded by Rule 172 of the Securities Act Regulations (“Rule 172”), would be) required by the Securities Act to be delivered in connection with sales of the Public Securities, any event shall occur or condition shall exist as a result of which it is necessary, in the opinion of counsel for the Underwriters or for the Company, to (i) amend the Registration Statement in order that the Registration Statement will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading; (ii) amend or supplement the Pricing Disclosure Package or the Prospectus in order that the Pricing Disclosure Package or the Prospectus, as the case may be, will not include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein not misleading in the light of the circumstances existing at the time it is delivered to a purchaser or (iii) amend the Registration Statement or amend or supplement the Pricing Disclosure Package or the Prospectus, as the case may be, in order to comply with the requirements of the Securities Act or the Securities Act Regulations, the Company will promptly (A) give the Representative notice of such event; (B) prepare any amendment or supplement as may be necessary to correct such statement or omission or to make the Registration Statement, the Pricing Disclosure Package or the Prospectus comply with such requirements and, a reasonable amount of time prior to any proposed filing or use, furnish the Representative with copies of any such amendment or supplement and (C) file with the Commission any such amendment or supplement; provided that the Company shall not file or use any such amendment or supplement to which the Representative or counsel for the Underwriters shall reasonably object. The Company will furnish to the Underwriters such number of copies of such amendment or supplement as the Underwriters may reasonably request. The Company has given the Representative notice of any filings made pursuant to the Exchange Act or the Exchange Act Regulations within 48 hours prior to the Applicable Time. The Company shall give the Representative notice of its intention to make any such filing from the Applicable Time until the later of the Closing Date and the exercise in full or expiration of the Over-allotment Option specified in Section 1.2 hereof and will furnish the Representative with copies of the related document(s) a reasonable amount of time prior to such proposed filing, as the case may be, and will not file or use any such document to which the Representative or counsel for the Underwriters shall reasonably object.

3.2.3. Exchange Act Registration. Until the later of (i) two (2) years after the date of this Agreement and (ii) the expiration date of the Warrants (or the date that all of the Pre-Funded Warrants and Warrants have been exercised, if earlier), the Company shall use its commercially reasonable efforts to maintain the registration of the shares of Common Stock and the Warrants under the Exchange Act, unless the Company is acquired, merged out of existence or goes private under Exchange Act Rule 13e-3 during such time.

3.2.4. Free Writing Prospectuses. The Company agrees that, unless it obtains the prior written consent of the Representative, it shall not make any offer relating to the Public Securities that would constitute an Issuer Free Writing Prospectus or that would otherwise constitute a “free writing prospectus,” or a portion thereof, required to be filed by the Company with the Commission or retained by the Company under Rule 433; provided that the Representative shall be deemed to have consented to each Issuer General Use Free Writing Prospectus hereto and any “road show that is a written communication” within the meaning of Rule 433(d)(8)(i) that has been reviewed by the Representative. The Company represents that it has treated or agrees that it will treat each such free writing prospectus consented to, or deemed consented to, by the Underwriters as an “issuer free writing prospectus,” as defined in Rule 433, and that it has complied and will comply with the applicable requirements of Rule 433 with respect thereto, including timely filing with the Commission where required, legending and record keeping. If at any time following issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development as a result of which such Issuer Free Writing Prospectus conflicted or would conflict with the information contained in the Registration Statement or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Underwriters and will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission.

3.2.5. Testing-the-Waters Communications. If at any time following the distribution of any Written Testing-the-Waters Communication there occurred or occurs an event or development as a result of which such Written Testing-the-Waters Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company shall promptly notify the Representative and shall promptly amend or supplement, at its own expense, such Written Testing-the-Waters Communication to eliminate or correct such untrue statement or omission.

3.3 Delivery to the Underwriters of Registration Statements. The Company has delivered or made available or shall deliver or make available to the Representative and counsel for the Representative, without charge, signed copies of the Registration Statement as originally filed and each amendment thereto (including exhibits filed therewith) and signed copies of all consents and certificates of experts, and will also deliver to the Underwriters, without charge, a conformed copy of the Registration Statement as originally filed and each amendment thereto (without exhibits) for each of the Underwriters. The copies of the Registration Statement and each amendment thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

3.4 Delivery to the Underwriters of Prospectuses. The Company has delivered or made available or will deliver or make available to each Underwriter, without charge, as many copies of each Preliminary Prospectus as such Underwriter reasonably requested, and the Company hereby consents to the use of such copies for purposes permitted by the Securities Act. The Company will furnish to each Underwriter, without charge, during the period when a prospectus relating to the Public Securities is (or, but for the exception afforded by Rule 172, would be) required to be delivered under the Securities Act, such number of copies of the Prospectus (as amended or supplemented) as such Underwriter may reasonably request. The Prospectus and any amendments or supplements thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

3.5 Effectiveness and Events Requiring Notice to the Representative. The Company shall use its best efforts to cause the Registration Statement to remain effective with a current prospectus through and including the expiration date of the Warrants (or the date that all of the Pre-Funded Warrants and Warrants have been exercised, if earlier), and shall notify the Representative immediately and confirm the notice in writing: (i) of the effectiveness of the Registration Statement and any amendment thereto; (ii) of the issuance by the Commission of any stop order or of the initiation, or the threatening, of any proceeding for that purpose; (iii) of the issuance by any state securities commission of any proceedings for the suspension of the qualification of the Public Securities for offering or sale in any jurisdiction or of the initiation, or the threatening, of any proceeding for that purpose; (iv) of the mailing and delivery to the Commission for filing of any amendment or supplement to the Registration Statement or Prospectus; (v) of the receipt of any comments or request for any additional information from the Commission; and (vi) of the happening of any event during the period described in this Section 3.5 that, in the judgment of the Company, makes any statement of a material fact made in the Registration Statement, the Pricing Disclosure Package or the Prospectus untrue or that requires the making of any changes in (a) the Registration Statement in order to make the statements therein not misleading, or (b) in the Pricing Disclosure Package or the Prospectus in order to make the statements therein, in light of the circumstances under which they were made, not misleading. If the Commission or any state securities commission shall enter a stop order or suspend such qualification at any time, the Company shall make every reasonable effort to obtain promptly the lifting of such order.

3.6 Review of Financial Statements. For a period of two (2) years after the date of this Agreement, the Company, at its expense, shall use its commercially reasonable efforts to cause its regularly engaged independent registered public accounting firm to review (but not audit) the Company's financial statements for each of the half year periods immediately preceding the announcement of any half year financial information.

3.7 Listing. The Company shall use its commercially reasonable efforts to maintain the listing of the shares of Common Stock and the Warrants (including the Public Securities) on the Exchange until the later of (i) two years from the date of this Agreement and (ii) the expiration date of the Warrants (or the date that all of the Pre-Funded Warrants and Warrants have been exercised, if earlier).

3.8 Financial Public Relations Firm. As of the Effective Date, the Company shall have retained a financial public relations firm reasonably acceptable to the Representative and the Company, which shall initially be IRTH Communications, LLC, which firm shall be experienced in assisting issuers in initial public offerings of securities and in their relations with their security holders, and shall use its commercially reasonable efforts to retain such firm or another firm reasonably acceptable to the Representative for a period of not less than two (2) years after the Effective Date.

3.9 Reports to the Representative.

3.9.1. Periodic Reports, etc. For a period of two (2) years after the date of this Agreement, the Company shall use its commercially reasonable efforts to furnish or make available to the Representative copies of such financial statements and other periodic and special reports as the Company from time to time furnishes generally to holders of any class of its securities and also promptly furnish to the Representative: (i) a copy of each periodic report the Company shall be required to file with the Commission under the Exchange Act and the Exchange Act Regulations; (ii) a copy of every press release and every news item and article with respect to the Company or its affairs which was released by the Company; (iii) a copy of each Form 8-K prepared and filed by the Company; (iv) five copies of each registration statement filed by the Company under the Securities Act; and (v) such additional documents and information with respect to the Company and the affairs of any future subsidiaries of the Company as the Representative may from time to time reasonably request; provided the Representative shall sign, if requested by the Company, a Regulation FD compliant confidentiality agreement which is reasonably acceptable to the Representative and Representative Counsel in connection with the Representative's receipt of such information. Documents filed with the Commission pursuant to its EDGAR system shall be deemed to have been delivered to the Representative pursuant to this Section 3.9.1.

3.9.2. Transfer Agent; Transfer Sheets. Until the later of (i) two (2) years after the date of this Agreement and (ii) the expiration date of the Warrants (or the date that all of the Pre-Funded Warrants and Warrants have been exercised, if earlier), the Company shall use its commercially reasonable efforts to retain a transfer agent and registrar and warrant agent acceptable to the Representative (the "Transfer Agent") and shall use its commercially reasonable efforts to furnish to the Representative at the Company's sole cost and expense such transfer sheets of the Company's securities as the Representative may reasonably request, including the daily and monthly consolidated transfer sheets of the Transfer Agent and DTC. American Stock Transfer & Trust Company, LLC is acceptable to the Representative to act as Transfer Agent for the shares of Common Stock and the Warrants.

3.9.3. Trading Reports. During such time as the Public Securities are listed on the Exchange, the Company shall provide to the Representative, at the Company's expense, such reports published by Exchange relating to price trading of the Public Securities and Underlying Shares, as the Representative shall reasonably request.

3.10 Payment of Expenses

The Company hereby agrees to pay on each of the Closing Date and the Option Closing Date, if any, to the extent not paid at the Closing Date, all expenses incident to the performance of the obligations of the Company under this Agreement, including, but not limited to: (a) all filing fees and communication expenses relating to the registration of the Public Securities to be sold in the Offering with the Commission; (b) all Public Filing System filing fees associated with the review of the Offering by FINRA; (c) all fees and expenses relating to the listing of such Public Securities on the Exchange and such other stock exchanges as the Company and the Representative together determine, including any fees charged by The Depository Trust Company (DTC) for new securities; (d) all fees, expenses and disbursements relating to background checks of the Company's officers and directors in an amount not to exceed \$15,000 in the aggregate; (e) all fees, expenses and disbursements relating to the registration or qualification of the Public Securities under the "blue sky" securities laws of such states and other jurisdictions as the Representative may reasonably designate; (f) all fees, expenses and disbursements relating to the registration, qualification or exemption of the Public Securities under the securities laws of such foreign jurisdictions as the Representative may reasonably designate; (g) the costs of all mailing and printing of the underwriting documents (including, without limitation, the Underwriting Agreement, any Blue Sky Surveys and, if appropriate, any Agreement Among Underwriters, Selected Dealers' Agreement, Underwriters' Questionnaire and Power of Attorney), Registration Statements, Prospectuses and all amendments, supplements and exhibits thereto and as many preliminary and final Prospectuses as the Representative may reasonably deem necessary; (h) the costs and expenses of a public relations firm; (i) the costs of preparing, printing and delivering certificates representing the Public Securities; (j) fees and expenses of the transfer agent and warrant agent for the Public Securities; (k) stock transfer and/or stamp taxes, if any, payable upon the transfer of securities from the Company to the Underwriters; (l) the costs associated with bound volumes of the public offering materials as well as commemorative mementos and lucite tombstones, in an amount not to exceed \$3,000; (m) the fees and expenses of the Company's accountants; (n) the fees and expenses of the Company's legal counsel and other agents and representatives; (o) fees and expenses of the Representative's legal counsel not to exceed \$125,000; (p) the \$29,500 cost associated with the Underwriter's use of Ipreo's book-building, prospectus tracking and compliance software for the Offering; (q) \$10,000 for data services and communications expenses; and (r) up to \$10,000 of ThinkEquity's actual accountable "road show" expenses. The Representative may deduct from the net proceeds of the Offering payable to the Company on the Closing Date, or the Option Closing Date, if any, the expenses set forth herein to be paid by the Company to the Underwriters. Notwithstanding the foregoing, (i) the Advance (as defined below) will only be applied against accountable expenses actually anticipated to be incurred, and (ii), in the event that the Offering is terminated, the Company agrees to reimburse the Underwriters pursuant to Section 8.3 hereof.

3.11 Application of Net Proceeds. The Company shall apply the net proceeds from the Offering received by it in a manner consistent with the application thereof described under the caption "Use of Proceeds" in the Registration Statement, the Pricing Disclosure Package and the Prospectus.

3.12 Delivery of Earnings Statements to Security Holders. The Company shall make generally available to its security holders as soon as practicable, but not later than the first day of the fifteenth (15th) full calendar month following the date of this Agreement, an earnings statement (which need not be certified by independent registered public accounting firm unless required by the Securities Act or the Securities Act Regulations, but which shall satisfy the provisions of Rule 158(a) under Section 11(a) of the Securities Act) covering a period of at least twelve (12) consecutive months beginning after the date of this Agreement.

3.13 Stabilization. Neither the Company nor, to its knowledge, any of its employees, directors or shareholders (without the consent of the Representative) has taken or shall take, directly or indirectly, any action designed to or that has constituted or that might reasonably be expected to cause or result in, under Regulation M of the Exchange Act, or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Public Securities.

3.14 Internal Controls. The Company shall maintain a system of internal accounting controls sufficient to provide reasonable assurances that: (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary in order to permit preparation of financial statements in accordance with IFRS and to maintain accountability for assets; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

3.15 Accountants. As of the date of this Agreement, the Company shall retain an independent registered public accounting firm reasonably acceptable to the Representative, and the Company shall use its commercially reasonable efforts to continue to retain a nationally recognized independent registered public accounting firm for a period of at least two (2) years after the date of this Agreement. The Representative acknowledges that the Auditor is acceptable to the Representative.

3.16 FINRA. The Company shall advise the Representative (who shall make an appropriate filing with FINRA) if it is or becomes aware that (i) any officer or director of the Company, (ii) any beneficial owner of 5% or more of any class of the Company's securities or (iii) any beneficial owner of the Company's unregistered equity securities which were acquired during the 180 days immediately preceding the filing of the Registration Statement is or becomes an affiliate or associated person of a FINRA member participating in the Offering (as determined in accordance with the rules and regulations of FINRA).

3.17 No Fiduciary Duties. The Company acknowledges and agrees that the Underwriters' responsibility to the Company is solely contractual in nature and that none of the Underwriters or their affiliates or any selling agent shall be deemed to be acting in a fiduciary capacity, or otherwise owes any fiduciary duty to the Company or any of its affiliates in connection with the Offering and the other transactions contemplated by this Agreement.

3.18 Company Lock-Up Agreements.

3.18.1. Restriction on Sales of Share Capital. The Company, on behalf of itself and any successor entity, agrees that, without the prior written consent of the Representative, it will not, for a period of six (6) months after the date of this Agreement (the "Lock-Up Period"), (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of share capital of the Company or any securities convertible into or exercisable or exchangeable for shares of share capital of the Company; (ii) file or caused to be filed any registration statement with the Commission relating to the offering of any shares of share capital of the Company or any securities convertible into or exercisable or exchangeable for shares of share capital of the Company; (iii) complete any offering of debt securities of the Company, other than entering into a line of credit with a traditional bank or (iv) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of share capital of the Company, whether any such transaction described in clause (i), (ii), (iii) or (iv) above is to be settled by delivery of shares of share capital of the Company or such other securities, in cash or otherwise.

The restrictions contained in this Section 3.18.1 shall not apply to (i) the Public Securities to be sold hereunder, (ii) the issuance by the Company of shares of Common Stock upon the exercise of a stock option or warrant or the conversion of a security outstanding on the date hereof, which is disclosed in the Registration Statement, Pricing Disclosure Package and Prospectus, provided that such options, warrants, and securities have not been amended since the date of this Agreement to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities or to extend the term of such securities, (iii) the issuance by the Company of stock options or shares of share capital of the Company under any equity compensation plan of the Company, and the filing of a registration statement on Form S-8 in respect of the issuance, vesting, exercise or settlement of equity awards under any such compensation plan, or (iv) or issue any shares of share capital of the Company or securities convertible into shares of share capital of the Company that are issued as consideration in an acquisition, merger or similar strategic transaction approved by a majority of the disinterested directors of the Company, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities, provided that in each of (ii), (iii) and (iv) above, the underlying shares shall be restricted from sale during the entire Lock-Up Period.

Notwithstanding the foregoing, if (i) during the last 17 days of the Lock-Up Period, the Company issues an earnings release or material news or a material event relating to the Company occurs, or (ii) prior to the expiration of the Lock-Up Period, the Company announces that it will release earnings results or becomes aware that material news or a material event will occur during the 16-day period beginning on the last day of the Lock-Up Period, the restrictions imposed by this Section 3.18.1 shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of such material news or material event, as applicable, unless the Representative waives, in writing, such extension; provided, however, that this extension of the Lock-Up Period shall not apply to the extent that FINRA has amended or repealed NASD Rule 2711(f)(4), or has otherwise provided written interpretive guidance regarding such rule, in each case, so as to eliminate the prohibition of any broker, dealer, or member of a national securities association from publishing or distributing any research report, with respect to the securities of an Emerging Growth Company prior to or after the expiration of any agreement between the broker, dealer, or member of a national securities association and the Emerging Growth Company or its shareholders that restricts or prohibits the sale of securities held by the Emerging Growth Company or its shareholders after the initial public offering date.

3.18.2. Restriction on Continuous Offerings. Notwithstanding the restrictions contained in Section 3.18.1, the Company, on behalf of itself and any successor entity, agrees that, without the prior written consent of the Representative, it will not, for a period of 24 months after the date of this Agreement, directly or indirectly in any “at-the-market,” continuous equity transaction or variable rate transaction, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of shares of share capital of the Company or any securities convertible into or exercisable or exchangeable for shares of share capital of the Company. Notwithstanding the foregoing, the Company will be permitted, commencing six (6) months from the Closing, to register and sell its Common Stock pursuant to (A) the Sales Agreement dated November 30, 2018, as amended, between the Company and A.G.P./Alliance Global Partners and (B) the Purchase Agreement dated December 5, 2022, between the Company and Lincoln Park Capital Fund, LLC.

3.19 Release of D&O Lock-up Period. If the Representative, in its sole discretion, agrees to release or waive the restrictions set forth in the Lock-Up Agreements described in Section 2.24 hereof for an officer or director of the Company and provide the Company with notice of the impending release or waiver at least three (3) Business Days before the effective date of the release or waiver, the Company agrees to announce the impending release or waiver by a press release substantially in the form of Exhibit C hereto through a major news service at least two (2) Business Days before the effective date of the release or waiver.

3.20 Blue Sky Qualifications. The Company shall use its best efforts, in cooperation with the Underwriters, if necessary, to qualify the Public Securities for offering and sale under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Representative may designate and to maintain such qualifications in effect so long as required to complete the distribution of the Public Securities; provided, however, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject.

3.21 Reporting Requirements. The Company, during the period when a prospectus relating to the Public Securities is (or, but for the exception afforded by Rule 172, would be) required to be delivered under the Securities Act, will file all documents required to be filed with the Commission pursuant to the Exchange Act within the time periods required by the Exchange Act and Exchange Act Regulations. Additionally, the Company shall report the use of proceeds from the issuance of the Public Securities as may be required under Rule 463 under the Securities Act Regulations.

3.22 Reservation of Common Stock. As of the date hereof, the Company has reserved and the Company shall continue to reserve and keep available at all times, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue the Public Securities and the Underlying Shares.

4. Conditions of Underwriters' Obligations. The obligations of the Underwriters to purchase and pay for the Public Securities, as provided herein, shall be subject to (i) the continuing accuracy of the representations and warranties of the Company as of the date hereof and as of each of the Closing Date and the Option Closing Date, if any; (ii) the accuracy of the statements of officers of the Company made pursuant to the provisions hereof; (iii) the performance by the Company of its obligations hereunder; and (iv) the following conditions:

4.1 Regulatory Matters.

4.1.1. Effectiveness of Registration Statement; Rule 430A Information. The Registration Statement has become effective not later than 5:00 p.m., Eastern time, on the date of this Agreement or such later date and time as shall be consented to in writing by you, and, at each of the Closing Date and any Option Closing Date, no stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the Securities Act, no order preventing or suspending the use of any Preliminary Prospectus or the Prospectus has been issued and no proceedings for any of those purposes have been instituted or are pending or, to the Company's knowledge, contemplated by the Commission. The Company has complied with each request (if any) from the Commission for additional information. The Prospectus containing the Rule 430A Information shall have been filed with the Commission in the manner and within the time frame required by Rule 424(b) (without reliance on Rule 424(b)(8)) or a post-effective amendment providing such information shall have been filed with, and declared effective by, the Commission in accordance with the requirements of Rule 430A.

4.1.2. FINRA Clearance. On or before the date of this Agreement, the Representative shall have received clearance from FINRA as to the amount of compensation allowable or payable to the Underwriters as described in the Registration Statement.

4.1.3. Exchange Stock Market Clearance. The Company shall have submitted the Listing of Additional Shares Notification Form to Nasdaq with respect to the Offering of the Firm Shares, Option Shares and the Underlying Shares and the Exchange shall not have raised any objection to the submission prior the Closing Date or each Option Closing Date, as applicable, and the Warrants shall have been approved for listing on Nasdaq, subject only to official notice of issuance.

4.2 Company Counsel Matters.

4.2.1. Closing Date Opinion of Counsel. On the Closing Date, the Representative shall have received the favorable opinion of Lowenstein Sandler LLP, counsel to the Company, dated the Closing Date and addressed to the Representative, substantially in the form of Exhibit D attached hereto.

4.2.2. Closing Date Opinion of Bermuda Counsel. On the Closing Date, the Representative shall have received the opinion of Conyers Dill & Pearman Limited, special Bermuda counsel for the Company, dated the Closing Date, addressed to the Representative in the form of Exhibit E attached hereto.

4.2.3. Opinion of Special Intellectual Property Counsel for the Company. On the Closing Date, the Representative shall have received the opinion of [IP COUNSEL NAME], special intellectual property counsel for the Company, dated the Closing Date, addressed to the Representative substantially in the form of Exhibit F attached hereto.

4.2.4. Opinion of Special Regulatory Counsel for the Company. On the Closing Date, the Representative shall have received the favorable opinion of Duval & Associates, P.A., counsel to the Company, dated the Closing Date and addressed to the Representative, substantially in the form of Exhibit G attached hereto.

4.2.5. Option Closing Date Opinions of Counsel. On the Option Closing Date, if any, the Representative shall have received the favorable opinions of each counsel listed in Sections 4.2.1 and 4.2.2, dated the Option Closing Date, addressed to the Representative and in form and substance reasonably satisfactory to the Representative, confirming as of the Option Closing Date, the statements made by such counsels in their respective opinions delivered on the Closing Date.

4.2.6. Reliance. In rendering such opinions, such counsel may rely: (i) as to matters involving the application of laws other than the laws of the United States and jurisdictions in which they are admitted, to the extent such counsel deems proper and to the extent specified in such opinion, if at all, upon an opinion or opinions (in form and substance reasonably satisfactory to the Representative) of other counsel reasonably acceptable to the Representative, familiar with the applicable laws; and (ii) as to matters of fact, to the extent they deem proper, on certificates or other written statements of officers of the Company and officers of departments of various jurisdictions having custody of documents respecting the corporate existence or good standing of the Company, provided that copies of any such statements or certificates shall be delivered to Representative Counsel if requested. The opinions of Lowenstein Sandler, Conyers Dill & Pearman Limited, Cooley LLP and Duval & Associates, P.A. and any opinion relied upon by Lowenstein Sandler shall include a statement to the effect that it may be relied upon by Representative Counsel in its opinion delivered to the Underwriters.

4.3 Comfort Letters.

4.3.1. Cold Comfort Letter. At the time this Agreement is executed you shall have received a cold comfort letter containing statements and information of the type customarily included in accountants' comfort letters with respect to the financial statements and certain financial information contained in the Registration Statement, the Pricing Disclosure Package and the Prospectus, addressed to the Representative and in form and substance satisfactory in all respects to you and to the Auditor, dated as of the date of this Agreement.

4.3.2. Bring-down Comfort Letter. At each of the Closing Date and the Option Closing Date, if any, the Representative shall have received from the Auditor a letter, dated as of the Closing Date or the Option Closing Date, as applicable, to the effect that the Auditor reaffirms the statements made in the letter furnished pursuant to Section 4.3.1, except that the specified date referred to shall be a date not more than three (3) business days prior to the Closing Date or the Option Closing Date, as applicable.

4.4 Officers' Certificates.

4.4.1. Officers' Certificate. The Company shall have furnished to the Representative a certificate, dated the Closing Date and any Option Closing Date (if such date is other than the Closing Date), of its Chief Executive Officer, its President and its Chief Financial Officer stating that (i) such officers have carefully examined the Registration Statement, the Pricing Disclosure Package, any Issuer Free Writing Prospectus and the Prospectus and, in their opinion, the Registration Statement and each amendment thereto, as of the Applicable Time and as of the Closing Date (or any Option Closing Date if such date is other than the Closing Date) did not include any untrue statement of a material fact and did not omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, and the Pricing Disclosure Package, as of the Applicable Time and as of the Closing Date (or any Option Closing Date if such date is other than the Closing Date), any Issuer Free Writing Prospectus as of its date and as of the Closing Date (or any Option Closing Date if such date is other than the Closing Date), the Prospectus and each amendment or supplement thereto, as of the respective date thereof and as of the Closing Date, did not include any untrue statement of a material fact and did not omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances in which they were made, not misleading, (ii) since the effective date of the Registration Statement, no event has occurred which should have been set forth in a supplement or amendment to the Registration Statement, the Pricing Disclosure Package or the Prospectus, (iii) to the best of their knowledge after reasonable investigation, as of the Closing Date (or any Option Closing Date if such date is other than the Closing Date), the representations and warranties of the Company in this Agreement are true and correct and the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied hereunder at or prior to the Closing Date (or any Option Closing Date if such date is other than the Closing Date), and (iv) there has not been, subsequent to the date of the most recent audited financial statements included or incorporated by reference in the Pricing Disclosure Package, any material adverse change in the financial position or results of operations of the Company, or any change or development that, singularly or in the aggregate, would involve a material adverse change or a prospective material adverse change, in or affecting the condition (financial or otherwise), results of operations, business, assets or prospects of the Company, except as set forth in the Prospectus.

4.4.2. Secretary's Certificate. At each of the Closing Date and the Option Closing Date, if any, the Representative shall have received a certificate of the Company signed by the Secretary of the Company, dated the Closing Date or the Option Date, as the case may be, respectively, certifying: (i) that each of the Charter and bye-laws is true and complete, has not been modified and is in full force and effect; (ii) that the resolutions of the Company's Board of Directors relating to the Offering are in full force and effect and have not been modified; (iii) as to the accuracy and completeness of all correspondence between the Company or its counsel and the Commission; and (iv) as to the incumbency of the officers of the Company. The documents referred to in such certificate shall be attached to such certificate.

4.5 No Material Changes. Prior to and on each of the Closing Date and each Option Closing Date, if any: (i) there shall have been no material adverse change or development involving a prospective material adverse change in the condition or prospects or the business activities, financial or otherwise, of the Company from the latest dates as of which such condition is set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus; (ii) no action, suit or proceeding, at law or in equity, shall have been pending or threatened against the Company or any Insider before or by any court or federal or state commission, board or other administrative agency wherein an unfavorable decision, ruling or finding may materially adversely affect the business, operations, prospects or financial condition or income of the Company, except as set forth in the Registration Statement, the Pricing Disclosure Package and the Prospectus; (iii) no stop order shall have been issued under the Securities Act and no proceedings therefor shall have been initiated or threatened by the Commission; and (iv) the Registration Statement, the Pricing Disclosure Package and the Prospectus and any amendments or supplements thereto shall contain all material statements which are required to be stated therein in accordance with the Securities Act and the Securities Act Regulations and shall conform in all material respects to the requirements of the Securities Act and the Securities Act Regulations, and neither the Registration Statement, the Pricing Disclosure Package nor the Prospectus nor any amendment or supplement thereto shall contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading.

4.6 Delivery of Agreements.

4.6.1. On or before the date of this Agreement, the Company shall have delivered to the Representative executed copies of the Lock-Up Agreements from each of the persons listed in Schedule 3 hereto.

4.6.2. On or before the Closing Date, the Company shall have delivered to the Representative an executed copy of the Warrant Agreement.

4.6.3. On the Closing Date and at each Option Closing Date (if any), the Company shall have delivered to the Representative executed copies of the Pre-Funded Warrants.

4.6.4. On or before the date of this Agreement, the Company shall have delivered to the Representative a copy of the Company's notice to exercise its right to convert the balance of the FiveT Loan (as defined in the Pricing Disclosure Package and Registration Statement) on the terms set forth in the Pricing Disclosure Package and the Registration Statement (the "FiveT Notice").

4.7 Additional Documents. At the Closing Date and at each Option Closing Date (if any) Representative Counsel shall have been furnished with such documents and opinions as they may require for the purpose of enabling Representative Counsel to deliver an opinion to the Underwriters, or in order to evidence the accuracy of any of the representations or warranties, or the fulfillment of any of the conditions, herein contained; and all proceedings taken by the Company in connection with the issuance and sale of the Public Securities as herein contemplated shall be satisfactory in form and substance to the Representative and Representative Counsel.

5. Indemnification.

5.1 Indemnification of the Underwriters.

5.1.1. General. Subject to the conditions set forth below, the Company agrees to indemnify and hold harmless each Underwriter, its affiliates and each of its and their respective directors, officers, members, employees, representatives, partners, shareholders, affiliates, counsel, and agents and each person, if any, who controls any such Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act (collectively the “Underwriter Indemnified Parties,” and each an “Underwriter Indemnified Party”), against any and all loss, liability, claim, damage and expense whatsoever (including but not limited to any and all legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, whether arising out of any action between any of the Underwriter Indemnified Parties and the Company or between any of the Underwriter Indemnified Parties and any third party, or otherwise) to which they or any of them may become subject under the Securities Act, the Exchange Act or any other statute or at common law or otherwise or under the laws of foreign countries (a “Claim”), (i) arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in (A) the Registration Statement, the Pricing Disclosure Package, any Preliminary Prospectus, the Prospectus, or in any Issuer Free Writing Prospectus or in any Written Testing-the-Waters Communication (as from time to time each may be amended and supplemented); (B) any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of the Offering, including any “road show” or investor presentations made to investors by the Company (whether in person or electronically); or (C) any application or other document or written communication (in this Section 5, collectively called “application”) executed by the Company or based upon written information furnished by the Company in any jurisdiction in order to qualify the Public Securities under the securities laws thereof or filed with the Commission, any state securities commission or agency, the Exchange or any other national securities exchange; or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, unless such statement or omission was made in reliance upon, and in conformity with, the Underwriters’ Information or (ii) otherwise arising in connection with or allegedly in connection with the Offering. The Company also agrees that it will reimburse each Underwriter Indemnified Party for all fees and expenses (including but not limited to any and all legal or other expenses reasonably incurred in investigating, preparing or defending against any litigation, commenced or threatened, or any claim whatsoever, whether arising out of any action between any of the Underwriter Indemnified Parties and the Company or between any of the Underwriter Indemnified Parties and any third party, or otherwise) (collectively, the “Expenses”), and further agrees wherever and whenever possible to advance payment of Expenses as they are incurred by an Underwriter Indemnified Party in investigating, preparing, pursuing or defending any Claim.

5.1.2. Procedure. If any action is brought against an Underwriter Indemnified Party in respect of which indemnity may be sought against the Company pursuant to Section 5.1.1, such Underwriter Indemnified Party shall promptly notify the Company in writing of the institution of such action and the Company shall assume the defense of such action, including the employment and fees of counsel (subject to the approval of such Underwriter Indemnified Party) and payment of actual expenses if an Underwriter Indemnified Party requests that the Company do so. Such Underwriter Indemnified Party shall have the right to employ its or their own counsel in any such case, but the fees and expenses of such counsel shall be at the expense of the Company, and shall be advanced by the Company. The Company shall not be liable for any settlement of any action effected without its consent (which shall not be unreasonably withheld). In addition, the Company shall not, without the prior written consent of the Underwriters, settle, compromise or consent to the entry of any judgment in or otherwise seek to terminate any pending or threatened action in respect of which advancement, reimbursement, indemnification or contribution may be sought hereunder (whether or not such Underwriter Indemnified Party is a party thereto) unless such settlement, compromise, consent or termination (i) includes an unconditional release of each Underwriter Indemnified Party, acceptable to such Underwriter Indemnified Party, from all liabilities, expenses and claims arising out of such action for which indemnification or contribution may be sought and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any Underwriter Indemnified Party.

5.2 Indemnification of the Company. Each Underwriter, severally and not jointly, agrees to indemnify and hold harmless the Company, its directors, its officers who signed the Registration Statement and persons who control the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all loss, liability, claim, damage and expense described in the foregoing indemnity from the Company to the several Underwriters, as incurred, but only with respect to untrue statements or omissions made in the Registration Statement, any Preliminary Prospectus, the Pricing Disclosure Package or Prospectus or any amendment or supplement thereto or in any application, in reliance upon, and in strict conformity with, the Underwriters' Information. In case any action shall be brought against the Company or any other person so indemnified based on any Preliminary Prospectus, the Registration Statement, the Pricing Disclosure Package or Prospectus or any amendment or supplement thereto or any application, and in respect of which indemnity may be sought against any Underwriter, such Underwriter shall have the rights and duties given to the Company, and the Company and each other person so indemnified shall have the rights and duties given to the several Underwriters by the provisions of Section 5.1.2. The Company agrees promptly to notify the Representative of the commencement of any litigation or proceedings against the Company or any of its officers, directors or any person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, in connection with the issuance and sale of the Public Securities or in connection with the Registration Statement, the Pricing Disclosure Package, the Prospectus, or any Issuer Free Writing Prospectus or any Written Testing-the-Waters Communication.

5.3 Contribution.

5.3.1. Contribution Rights. If the indemnification provided for in this Section 5 shall for any reason be unavailable to or insufficient to hold harmless an indemnified party under Section 5.1 or 5.2 in respect of any loss, claim, damage or liability, or any action in respect thereof, referred to therein, then each indemnifying party shall, in lieu of indemnifying such indemnified party, contribute to the amount paid or payable by such indemnified party as a result of such loss, claim, damage or liability, or action in respect thereof, (i) in such proportion as shall be appropriate to reflect the relative benefits received by the Company, on the one hand, and the Underwriters, on the other, from the Offering of the Public Securities, or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company, on the one hand, and the Underwriters, on the other, with respect to the statements or omissions that resulted in such loss, claim, damage or liability, or action in respect thereof, as well as any other relevant equitable considerations. The relative benefits received by the Company, on the one hand, and the Underwriters, on the other, with respect to such Offering shall be deemed to be in the same proportion as the total net proceeds from the Offering of the Public Securities purchased under this Agreement (before deducting expenses) received by the Company, as set forth in the table on the cover page of the Prospectus, on the one hand, and the total underwriting discounts and commissions received by the Underwriters with respect to the shares of the Common Stock purchased under this Agreement, as set forth in the table on the cover page of the Prospectus, on the other hand. The relative fault shall be determined by reference to whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Underwriters, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Underwriters agree that it would not be just and equitable if contributions pursuant to this Section 5.3.1 were to be determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, damage or liability, or action in respect thereof, referred to above in this Section 5.3.1 shall be deemed to include, for purposes of this Section 5.3.1, any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim. Notwithstanding the provisions of this Section 5.3.1 in no event shall an Underwriter be required to contribute any amount in excess of the amount by which the total underwriting discounts and commissions received by such Underwriter with respect to the Offering of the Public Securities exceeds the amount of any damages that such Underwriter has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

5.3.2. Contribution Procedure. Within fifteen (15) days after receipt by any party to this Agreement (or its representative) of notice of the commencement of any action, suit or proceeding, such party will, if a claim for contribution in respect thereof is to be made against another party (“contributing party”), notify the contributing party of the commencement thereof, but the failure to so notify the contributing party will not relieve it from any liability which it may have to any other party other than for contribution hereunder. In case any such action, suit or proceeding is brought against any party, and such party notifies a contributing party or its representative of the commencement thereof within the aforesaid 15 days, the contributing party will be entitled to participate therein with the notifying party and any other contributing party similarly notified. Any such contributing party shall not be liable to any party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution on account of any settlement of any claim, action or proceeding affected by such party seeking contribution without the written consent of such contributing party. The contribution provisions contained in this Section 5.3.2 are intended to supersede, to the extent permitted by law, any right to contribution under the Securities Act, the Exchange Act or otherwise available. Each Underwriter’s obligations to contribute pursuant to this Section 5.3 are several and not joint.

6. Default by an Underwriter.

6.1 Default Not Exceeding 10% of Firm Securities or Option Securities. If any Underwriter or Underwriters shall default in its or their obligations to purchase the Firm Securities or the Option Securities, if the Over-allotment Option is exercised hereunder, and if the number of the Firm Securities or Option Securities with respect to which such default relates does not exceed in the aggregate 10% of the number of Firm Securities or Option Securities that all Underwriters have agreed to purchase hereunder, then such Firm Securities or Option Securities to which the default relates shall be purchased by the non-defaulting Underwriters in proportion to their respective commitments hereunder.

6.2 Default Exceeding 10% of Firm Securities or Option Securities. In the event that the default addressed in Section 6.1 relates to more than 10% of the Firm Securities or Option Securities, you may in your discretion arrange for yourself or for another party or parties to purchase such Firm Securities or Option Securities to which such default relates on the terms contained herein. If, within one (1) Business Day after such default relating to more than 10% of the Firm Securities or Option Securities, you do not arrange for the purchase of such Firm Securities or Option Securities, then the Company shall be entitled to a further period of one (1) Business Day within which to procure another party or parties satisfactory to you to purchase said Firm Securities or Option Securities on such terms. In the event that neither you nor the Company arrange for the purchase of the Firm Securities or Option Securities to which a default relates as provided in this Section 6, this Agreement will automatically be terminated by you or the Company without liability on the part of the Company (except as provided in Sections 3.9 and 5 hereof) or the several Underwriters (except as provided in Section 5 hereof); provided, however, that if such default occurs with respect to the Option Securities, this Agreement will not terminate as to the Firm Securities; and provided, further, that nothing herein shall relieve a defaulting Underwriter of its liability, if any, to the other Underwriters and to the Company for damages occasioned by its default hereunder.

6.3 Postponement of Closing Date. In the event that the Firm Securities or Option Securities to which the default relates are to be purchased by the non-defaulting Underwriters, or are to be purchased by another party or parties as aforesaid, you or the Company shall have the right to postpone the Closing Date or Option Closing Date for a reasonable period, but not in any event exceeding five (5) Business Days, in order to effect whatever changes may thereby be made necessary in the Registration Statement, the Pricing Disclosure Package or the Prospectus or in any other documents and arrangements, and the Company agrees to file promptly any amendment to the Registration Statement, the Pricing Disclosure Package or the Prospectus that in the opinion of counsel for the Underwriter may thereby be made necessary. The term "Underwriter" as used in this Agreement shall include any party substituted under this Section 6 with like effect as if it had originally been a party to this Agreement with respect to such shares of Common Stock.

7. Additional Covenants.

7.1 Board Composition and Board Designations. The Company shall ensure that: (i) the qualifications of the persons serving as members of the Board of Directors and the overall composition of the Board comply with the Sarbanes-Oxley Act, with the Exchange Act and with the listing rules of the Exchange or any other national securities exchange, as the case may be, in the event the Company seeks to have its Public Securities listed on another exchange or quoted on an automated quotation system, and (ii) if applicable, at least one member of the Audit Committee of the Board of Directors qualifies as an "audit committee financial expert," as such term is defined under Regulation S-K and the listing rules of the Exchange.

7.2 Prohibition on Press Releases and Public Announcements. The Company shall not issue press releases or engage in any other publicity, without the Representative's prior written consent, for a period ending at 5:00 p.m., Eastern time, on the first (1st) Business Day following the forty-fifth (45th) day after the Closing Date, other than normal and customary releases issued in the ordinary course of the Company's business.

7.3 FiveT Notice. On the Closing Date, the Company shall deliver the FiveT Notice to FiveT Investment Management Ltd.

8. Effective Date of this Agreement and Termination Thereof.

8.1 Effective Date. This Agreement shall become effective when both the Company and the Representative have executed the same and delivered counterparts of such signatures to the other party.

8.2 Termination. The Representative shall have the right to terminate this Agreement at any time prior to any Closing Date, (i) if any domestic or international event or act or occurrence has materially disrupted, or in your opinion will in the immediate future materially disrupt, general securities markets in the United States; or (ii) if trading on the New York Stock Exchange or the Nasdaq Stock Market LLC shall have been suspended or materially limited, or minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required by FINRA or by order of the Commission or any other government authority having jurisdiction; or (iii) if the United States shall have become involved in a new war or an increase in major hostilities; or (iv) if a banking moratorium has been declared by a New York State or federal authority; or (v) if a moratorium on foreign exchange trading has been declared which materially adversely impacts the United States securities markets; or (vi) if the Company shall have sustained a material loss by fire, flood, accident, hurricane, earthquake, theft, sabotage or other calamity or malicious act which, whether or not such loss shall have been insured, will, in your opinion, make it inadvisable to proceed with the delivery of the Firm Securities or Firm Shares; or (vii) if the Company is in material breach of any of its representations, warranties or covenants hereunder; or (viii) if the Representative shall have become aware after the date hereof of such a material adverse change in the conditions or prospects of the Company, or such adverse material change in general market conditions as in the Representative's judgment would make it impracticable to proceed with the offering, sale and/or delivery of the Public Securities or to enforce contracts made by the Underwriters for the sale of the Public Securities.

8.3 Expenses. Notwithstanding anything to the contrary in this Agreement, except in the case of a default by the Underwriters, pursuant to Section 6.2 above, in the event that this Agreement shall not be carried out for any reason whatsoever, within the time specified herein or any extensions thereof pursuant to the terms herein, the Company shall be obligated to pay to the Underwriters their actual and accountable out-of-pocket expenses related to the transactions contemplated herein then due and payable (including the fees and disbursements of Representative Counsel) up to \$150,000, inclusive of the \$35,000 advance for accountable expenses previously paid by the Company to the Representative (the "Advance") and upon demand the Company shall pay the full amount thereof to the Representative on behalf of the Underwriters; provided, however, that such expense cap in no way limits or impairs the indemnification and contribution provisions of this Agreement. Notwithstanding the foregoing, any advance received by the Representative will be reimbursed to the Company to the extent not actually incurred in compliance with FINRA Rule 5110(g)(4)(A).

8.4 Indemnification. Notwithstanding any contrary provision contained in this Agreement, any election hereunder or any termination of this Agreement, and whether or not this Agreement is otherwise carried out, the provisions of Section 5 shall remain in full force and effect and shall not be in any way affected by, such election or termination or failure to carry out the terms of this Agreement or any part hereof.

8.5 Representations, Warranties, Agreements to Survive. All representations, warranties and agreements contained in this Agreement or in certificates of officers of the Company submitted pursuant hereto, shall remain operative and in full force and effect regardless of (i) any investigation made by or on behalf of any Underwriter or its Affiliates or selling agents, any person controlling any Underwriter, its officers or directors or any person controlling the Company or (ii) delivery of and payment for the Public Securities.

9. Miscellaneous.

9.1 Notices. All communications hereunder, except as herein otherwise specifically provided, shall be in writing and shall be mailed (registered or certified mail, return receipt requested), personally delivered or sent by electronic mail transmission and confirmed and shall be deemed given when so delivered and confirmed or if mailed, two (2) days after such mailing.

If to the Representative:

ThinkEquity LLC
17 State Street, 41st Fl
New York, NY 10004
Attn: Head of Investment Banking
e-mail: Notices@think-equity.com

with a copy (which shall not constitute notice) to:

Blank Rome LLP
1271 Avenue of the Americas
New York, NY 10020
Attn: Brad L. Shiffman
Fax No.: 212-885-5001

If to the Company:

Altamira Therapeutics Ltd.
Clarendon House
2 Church Street
Hampton HM11
Bermuda
Attention: Thomas Meyer
email: thm@altamiratherapeutics.com

with a copy (which shall not constitute notice) to:

Lowenstein Sandler
1251 Avenue of the America
New York, NY 10020
Attention: Steven Skolnick
email: sskolnick@lowenstein.com

9.2 Headings. The headings contained herein are for the sole purpose of convenience of reference, and shall not in any way limit or affect the meaning or interpretation of any of the terms or provisions of this Agreement.

9.3 Amendment. This Agreement may only be amended by a written instrument executed by each of the parties hereto.

9.4 Entire Agreement. This Agreement (together with the other agreements and documents being delivered pursuant to or in connection with this Agreement) constitutes the entire agreement of the parties hereto with respect to the subject matter hereof and thereof, and supersedes all prior agreements and understandings of the parties, oral and written, with respect to the subject matter hereof. Notwithstanding anything to the contrary set forth herein, it is understood and agreed by the parties hereto that all other terms and conditions of that certain engagement letter between the Company and ThinkEquity LLC dated December 22, 2022, shall remain in full force and effect.

9.5 Binding Effect. This Agreement shall inure solely to the benefit of and shall be binding upon the Representative, the Underwriters, the Company and the controlling persons, directors and officers referred to in Section 5 hereof, and their respective successors, legal representatives, heirs and assigns, and no other person shall have or be construed to have any legal or equitable right, remedy or claim under or in respect of or by virtue of this Agreement or any provisions herein contained. The term "successors and assigns" shall not include a purchaser, in its capacity as such, of securities from any of the Underwriters.

9.6 Governing Law; Consent to Jurisdiction; Trial by Jury; Appointment of Agent for Service of Process. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of New York, without giving effect to conflict of laws principles thereof. The Company hereby agrees that any action, proceeding or claim against it arising out of, or relating in any way to this Agreement shall be brought and enforced in the New York Supreme Court, County of New York, or in the United States District Court for the Southern District of New York, and irrevocably submits to such jurisdiction, which jurisdiction shall be exclusive. The Company hereby waives any objection to such exclusive jurisdiction and that such courts represent an inconvenient forum. Any such process or summons to be served upon the Company may be served by transmitting a copy thereof by registered or certified mail, return receipt requested, postage prepaid, addressed to it at the address set forth in Section 9.1 hereof. Such mailing shall be deemed personal service and shall be legal and binding upon the Company in any action, proceeding or claim. The Company agrees that the prevailing party(ies) in any such action shall be entitled to recover from the other party(ies) all of its reasonable attorneys' fees and expenses relating to such action or proceeding and/or incurred in connection with the preparation therefor. The Company (on its behalf and, to the extent permitted by applicable law, on behalf of its shareholders and affiliates) and each of the Underwriters hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby. To the extent that the Company has or hereafter may acquire any immunity (on the grounds of sovereignty or otherwise) from the jurisdiction of any court or from any legal process with respect to itself or its property, the Company irrevocably waives, to the fullest extent permitted by law, such immunity in respect of any suit, action or proceeding. The Company irrevocably appoints Altamira Therapeutics, Inc. as its authorized agent (the "Authorized Agent") in the Borough of Manhattan in the city of New York upon which process may be served in any such suit or proceeding, and agrees that service of process in any manner permitted by applicable law upon such agent shall be deemed in every respect effective service of process in any manner permitted by applicable law upon the Company, as the case may be, in any such suit or proceeding. The Company further agrees to take any and all action as may be necessary to maintain such designation and appointment of such agent in full force and effect for a period of seven years from the date of this Agreement.

9.7 Execution in Counterparts. This Agreement may be executed in one or more counterparts, and by the different parties hereto in separate counterparts, each of which shall be deemed to be an original, but all of which taken together shall constitute one and the same agreement, and shall become effective when one or more counterparts has been signed by each of the parties hereto and delivered to each of the other parties hereto. Delivery of a signed counterpart of this Agreement by facsimile or email/pdf transmission shall constitute valid and sufficient delivery thereof.

9.8 Waiver, etc. The failure of any of the parties hereto to at any time enforce any of the provisions of this Agreement shall not be deemed or construed to be a waiver of any such provision, nor to in any way effect the validity of this Agreement or any provision hereof or the right of any of the parties hereto to thereafter enforce each and every provision of this Agreement. No waiver of any breach, non-compliance or non-fulfillment of any of the provisions of this Agreement shall be effective unless set forth in a written instrument executed by the party or parties against whom or which enforcement of such waiver is sought; and no waiver of any such breach, non-compliance or non-fulfillment shall be construed or deemed to be a waiver of any other or subsequent breach, non-compliance or non-fulfillment.

[Signature Page Follows]

If the foregoing correctly sets forth the understanding between the Underwriters and the Company, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between us.

Very truly yours,

ALTAMIRA THERAPEUTICS LTD.

By: _____
Name:
Title:

Confirmed as of the date first written above mentioned, on behalf of itself and as Representative of the several Underwriters named on Schedule 1 hereto:

THINKEQUITY LLC

By: _____
Name:
Title:

[SIGNATURE PAGE]

SCHEDULE 1

Underwriter	Total Number of Firm Shares to be Purchased	Total Number of Firm Pre- Funded Warrants to be Purchased	Total Number of Firm Warrants to be Purchased	Number of Option Shares to be Purchased if the Over- Allotment Option is Fully Exercised	Number of Option Pre- Funded Warrants to be Purchased if the Over- Allotment Option is Fully Exercised	Total Number of Option Warrants to be Purchased if the Over- Allotment Option is Fully Exercised
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ThinkEquity LLC

TOTAL

SCHEDULE 2-A

Pricing Information

Number of Firm Shares: [•]

Number of Firm Pre-Funded Warrants: []

Number of Firm Warrants: []

Number of Option Shares: [•]

Number of Option Pre-Funded Warrants: []

Number of Option Warrants: []

Public Offering Price per Share: \$[•]

Public Offering Price per Pre-Funded Warrant: []

Public Offering Price per Warrant: []

Underwriting Discount per Share: \$[•]

Underwriting Discount per Pre-Funded Warrant: []

Underwriting Discount per Warrant: []

Proceeds to Company per Share (before expenses): \$[•]

Proceeds to Company per Pre-Funded Warrants: []

Proceeds to Company per Warrant (before expenses): []

SCHEDULE 2-B

Issuer General Use Free Writing Prospectuses

[None.]

SCHEDULE 2-C

Written Testing-the-Waters Communications

[None.]

SCHEDULE 3

List of Lock-Up Parties

Sch. 3-1

EXHIBIT A

PRE-FUNDED COMMON SHARE PURCHASE WARRANT

ALTAMIRA THERAPEUTICS LTD.

Warrant Shares: _____

Issue Date: ____, 2023

THIS PRE-FUNDED COMMON SHARE PURCHASE WARRANT (the "Warrant") certifies that, for value received, or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the Issue Date and until this Warrant is exercised in full (the "Termination Date") but not thereafter, to subscribe for and purchase from Altamira Therapeutics Ltd., an exempted company limited by shares incorporated in Bermuda (the "Company"), up to _____ Common Shares (as subject to adjustment hereunder, the "Warrant Shares"). The purchase price of one Common Share under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

"Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

"Commission" means the United States Securities and Exchange Commission.

"Common Shares" means the common shares of the Company, par value CHF 0.20 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

"Common Share Equivalents" means any securities of the Company or the Subsidiaries (as defined in Section 3(f)) which would entitle the holder thereof to acquire at any time Common Shares, including, without limitation, any debt, preferred shares, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Shares.

"Exchange Act" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"Liens" means a lien, charge pledge, security interest, encumbrance, right of first refusal, preemptive right or other restriction.

"Person" means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

"Proceeding" means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.

"Registration Statement" means the Company's registration statement on Form F-1 (File No. 333-269873).

"Rule 144" means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

"Securities Act" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"Trading Day" means a day on which the Common Shares are traded on a Trading Market.

“Trading Market” means any of the following markets or exchanges on which the Common Shares is listed or quoted for trading on the date in question: the OTCQB, OTCQX or Pink Open Market operated by OTC Markets Group, the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, or the New York Stock Exchange (or any successors to any of the foregoing).

“Transfer Agent” means American Stock Transfer & Trust Company, LLC, with a mailing address of 48 Wall Street, 22nd Floor, New York, NY 10005 and a facsimile number of (718) 234-5001, and any successor transfer agent of the Company.

“Warrants” means this Warrant and other Pre-Funded Common Shares Purchase Warrants issued by the Company pursuant to the Registration Statement.

Section 2. Exercise.

a) Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Issue Date and on or before the Termination Date by delivery to the Company of a duly executed facsimile copy (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined in Section 2(d)(i) herein) following the date of exercise as aforesaid, the Holder shall deliver to the Company the aggregate Exercise Price for the Warrant Shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased in connection with such partial exercise. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.**

b) Exercise Price. The aggregate exercise price of this Warrant, except for a nominal exercise price of CHF 0.01 per Warrant Share, was pre-funded to the Company on or prior to the Issue Date and, consequently, no additional consideration (other than the nominal exercise price of CHF 0.01 per Warrant Share) shall be required to be paid by the Holder to any Person to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate exercise price under any circumstance or for any reason whatsoever, including in the event this Warrant shall not have been exercised prior to the Termination Date. The remaining unpaid exercise price per share of Common Shares under this Warrant shall be CHF 0.01, subject to adjustment hereunder (the “Exercise Price”).

c) Cashless Exercise. This Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares for the deemed surrender of the Warrant in whole or in part equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

- (A) = as applicable: (i) the Closing Sale Price of the Common Shares on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (x) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (y) the Bid Price of the Common Shares as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter pursuant to Section 2(a) hereof (including until two (2) hours after the close of “regular trading hours” on a Trading Day), or (iii) the Closing Sale Price of the Common Shares on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;
- (B) = the Exercise Price of this Warrant, as adjusted hereunder; and
- (X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

The issue price for each such Warrant Share to be issued pursuant to the cashless exercise of a Warrant will be equal to (B), as defined above, and the total issue price for the aggregate number of Warrant Shares issued pursuant to the cashless exercise of a Warrant will be deemed paid and satisfied in full by the deemed surrender to the Company of the portion of such Warrant being exercised in accordance with this Section 1(c). Notwithstanding anything herein to the contrary, the Company shall not be required to make any cash payments or net cash settlement to the Holder in lieu of delivery of the Warrant Shares. If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

“Bid Price” means, for any security as of the particular time of determination, the bid price for such security on the Trading Market as reported by Bloomberg as of such time of determination, or, if the Trading Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported on the Pink Open Market as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such fair market value shall be determined pursuant to the provisions set forth in clause (d) of the definition of VWAP. All such determinations to be appropriately adjusted for any share dividend, share split, share consolidation, reclassification or other similar transaction during the applicable calculation period.

“Closing Sale Price” means, for any security as of any date, the last closing trade price for such security on the Trading Market, as reported by Bloomberg, or, if the Trading Market begins to operate on an extended hours basis and does not designate the closing trade price, then the last trade price of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Trading Market is not the principal securities exchange or trading market for such security, the last trade price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last trade price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no last trade price is reported for such security by Bloomberg, the average of the ask prices of any market makers for such security as reported on the in the OTC Link or on the Pink Open Market. If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, Closing Sale Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such fair market value shall be determined pursuant to the provisions set forth in clause (d) of the definition of VWAP. All such determinations to be appropriately adjusted for any share dividend, share split, share consolidation, reclassification or other similar transaction during the applicable calculation period.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Shares are then listed or quoted for trading on a Trading Market other than the OTCQB, OTCQX or Pink Open Market operated by OTC Markets Group, the daily volume weighted average price of the Common Shares for such date (or the nearest preceding date) on the Trading Market on which the Common Shares are then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if the Common Shares are then quoted for trading on the OTCQB or OTCQX operated by OTC Markets Group, the volume weighted average price of the Common Shares for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Shares are then quoted for trading on the Pink Open Market operated by OTC Markets Group (or a similar organization or agency succeeding to its functions of reporting prices), the most recent Bid Price per share of Common Shares reported on the Pink Open Market, or (d) in all other cases, the fair market value of a share of Common Shares as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

d) Mechanics of Exercise.

i. Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with The Depository Trust Company through its Deposit or Withdrawal at Custodian system (the “DWAC”) if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to, or resale of, the Warrant Shares by the Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the “Warrant Share Delivery Date”). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the Holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Shares on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered to said Holder or the Holder rescinds such exercise. The Company agrees to maintain a Transfer Agent that is a participant in the Fast Automated Securities Transfer, or FAST, program so long as this Warrant remains outstanding and exercisable. As used herein, “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Shares as in effect on the date of delivery of the Notice of Exercise. Notwithstanding the foregoing, with respect to any Notice(s) of Exercise delivered on or prior to 12:00 p.m. (New York City time) on the Issue Date, which may be delivered at any time after the time of execution of the Underwriting Agreement, dated January [•], 2023 between the Company and ThinkEquity LLC, the Company agrees to deliver the Warrant Shares subject to such notice(s) by 4:00 p.m. (New York City time) on the Issue Date.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

iv. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, Common Shares to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the Common Shares so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue by (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of Common Shares that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Shares having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of Common Shares with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver Common Shares upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event that Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

vii. Closing of Books. The Company shall not close its shareholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of Common Shares beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of Common Shares issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of Common Shares which would be issuable upon (i) exercise of the remaining, non-exercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or non-converted portion of any other securities of the Company (including, without limitation, any other Common Shares Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding Common Shares, a Holder may rely on the number of outstanding Common Shares as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of Common Shares outstanding. Upon the written or oral request of a Holder, the Company shall within two Trading Days confirm orally and in writing to the Holder the number of Common Shares then outstanding. In any case, the number of outstanding Common Shares shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding Common Shares was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of Common Shares outstanding immediately after giving effect to the issuance of Common Shares issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of Common Shares outstanding immediately after giving effect to the issuance of Common Shares upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

Section 3. Certain Adjustments.

a) Share Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a share dividend or otherwise makes a distribution or distributions on Common Shares or any other equity or equity equivalent securities payable in Common Shares (which, for avoidance of doubt, shall not include any Common Shares issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding Common Shares into a larger number of shares, (iii) combines (including by way of reverse share split or consolidation) outstanding Common Shares into a smaller number of shares, or (iv) issues by reclassification of Common Shares any capital shares of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of Common Shares (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of Common Shares outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of shareholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Share Equivalents or rights to purchase shares, warrants, securities or other property pro rata to the record holders of Common Shares (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of Common Shares acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such Common Shares as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of Common Shares, by way of return of capital or otherwise (including, without limitation, any distribution of cash, shares or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “Distribution”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of Common Shares acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of Common Shares are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder’s right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any Common Shares as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or amalgamation or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Shares are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Shares, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of Common Shares or any compulsory share exchange pursuant to which Common Shares are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding Common Shares (not including any Common Shares held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of Common Shares of the successor or acquiring corporation or of the Company, if it is the surviving corporation or is otherwise the continuing corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of Common Shares for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one Common Share in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Shares are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(d) pursuant to written agreements prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares or other securities of such Successor Entity (or its parent entity) equivalent to the Common Shares acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of or other securities (but taking into account the relative value of the Common Shares pursuant to such Fundamental Transaction and the value of such shares or securities, such number of shares or securities and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of Common Shares deemed to be issued and outstanding as of a given date shall be the sum of the number of Common Shares (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Shares, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Shares, (C) the Company shall authorize the granting to all holders of the Common Shares rights or warrants to subscribe for or purchase any shares of the Company or of any rights, (D) the approval of any shareholders of the Company shall be required in connection with any reclassification of the Common Shares, any consolidation or merger, amalgamation or arrangement to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Shares is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Shares of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, amalgamation, arrangement, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Shares of record shall be entitled to exchange their Common Shares for securities, cash or other property deliverable upon such reclassification, consolidation, merger, amalgamation, arrangement sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of its subsidiaries (the "Subsidiaries"), the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. This Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date on which the Holder delivers an assignment form to the Company assigning this Warrant in full. This Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the original Issue Date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the “Warrant Register”), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

a) No Rights as Shareholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a shareholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3. Without limiting any rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to Section 2(c) or to receive cash payments pursuant to Section 2(d)(i) and Section 2(d)(iv) herein, in no event, including if the Company is for any reason unable to issue and deliver Warrant Shares upon exercise of this Warrant as required pursuant to the terms thereof, shall the Company be required to net cash settle an exercise of this Warrant.

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any share certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which shall in no event include the posting of any bond), and upon surrender and cancellation of such Warrant or share certificate, if mutilated, the Company shall make and deliver a new Warrant or share certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or share certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then such action may be taken or such right may be exercised on the next succeeding Trading Day.

d) Authorized Shares. The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Shares a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company shall take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Shares may be listed or quoted for trading. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and non-assessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, amalgamation, arrangement dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company shall (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflict of laws thereof. Each party agrees that all legal Proceedings concerning the interpretation, enforcement and defense of this Warrant shall be commenced in the state and federal courts sitting in the City of New York, Borough of Manhattan (the "New York Courts"). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any provision hereunder), and hereby irrevocably waives, and agrees not to assert in any suit, action or Proceeding, any claim that it is not personally subject to the jurisdiction of such New York Courts, or such New York Courts are improper or inconvenient venue for such Proceeding. If any party shall commence an action or Proceeding to enforce any provisions of this Warrant, then the prevailing party in such action or Proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or Proceeding.

f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and if the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate Proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by facsimile or by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at Clarendon House, 2 Church Street, Hamilton, HM11, Bermuda, facsimile number: [], email address: [] or such other facsimile number, email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by facsimile, email or sent by a nationally recognized overnight courier service addressed to each Holder at the facsimile number, email address or address of such Holder appearing on the books of the Company. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via facsimile at the facsimile number or e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given.

i) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Shares or as a shareholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

j) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

k) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

l) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and the Holder on the other hand.

m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

n) No Expense Reimbursement. The Holder shall in no way be required to pay, or to reimburse the Company for, any fees or expenses of the Company's transfer agent in connection with the issuance or holding or sale of the Common Shares, Warrant and/or Warrant Shares. The Company shall solely be responsible for any and all such fees and expenses.

o) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

ALTAMIRA THERAPEUTICS LTD.

By: _____
Name:
Title:

NOTICE OF EXERCISE

TO: **ALTAMIRA THERAPEUTICS LTD.**

(1) The undersigned hereby elects to purchase Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

- in lawful money of the United States; or
- the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

The Warrant Shares shall be delivered to the following DWAC Account Number:

[SIGNATURE OF HOLDER]

Name of Investing Entity:

*Signature of Authorized
Signatory of Investing Entity:*
Name of Authorized Signatory:
Title of Authorized Signatory:
Date:

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____

(Please Print)

Address: _____

(Please Print)

Phone Number: _____

Email Address: _____

Dated: ,

Holder's Signature: _____

Holder's Address: _____

EXHIBIT B

Lock-Up Agreement

[•], 2023

ThinkEquity LLC
17 State Street, 41st Floor
New York, NY 10004

As Representative of the several Underwriters named on Schedule 1 to the Underwriting Agreement referenced below

Ladies and Gentlemen:

The undersigned understands that ThinkEquity LLC (the “**Representative**”), proposes to enter into an Underwriting Agreement (the “**Underwriting Agreement**”) with Altamira Therapeutics Ltd., an exempted company limited by shares incorporated in Bermuda (the “**Company**”), providing for the public offering (the “**Public Offering**”) of common shares, par value CHF 0.20 per share, of the Company (the “**Common Shares**”).

Ex. B-1

To induce the Representative to continue its efforts in connection with the Public Offering, the undersigned hereby agrees that, without the prior written consent of the Representative, the undersigned will not, during the period commencing on the date hereof and ending three months after the date of the Underwriting Agreement relating to the Public Offering (the “**Lock-Up Period**”), (1) offer, pledge, sell, contract to sell, grant, lend, or otherwise transfer or dispose of, directly or indirectly, any Common Shares or any securities convertible into or exercisable or exchangeable for Common Shares, whether now owned or hereafter acquired by the undersigned or with respect to which the undersigned has or hereafter acquires the power of disposition (collectively, the “**Lock-Up Securities**”); (2) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Lock-Up Securities, whether any such transaction described in clause (1) or (2) above is to be settled by delivery of Lock-Up Securities, in cash or otherwise; (3) make any demand for or exercise any right with respect to the registration of any Lock-Up Securities; or (4) publicly disclose the intention to make any offer, sale, pledge or disposition, or to enter into any transaction, swap, hedge or other arrangement relating to any Lock-Up Securities. Notwithstanding the foregoing, and subject to the conditions below, the undersigned may transfer Lock-Up Securities without the prior written consent of the Representative in connection with (a) transactions relating to Lock-Up Securities acquired in open market transactions after the completion of the Public Offering; provided that no filing under Section 13 or Section 16(a) of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”), or other public announcement shall be required or shall be voluntarily made in connection with subsequent sales of Lock-Up Securities acquired in such open market transactions; (b) transfers of Lock-Up Securities as a *bona fide* gift, by will or intestacy or to a family member or trust for the benefit of the undersigned or a family member (for purposes of this lock-up agreement, “family member” means any relationship by blood, marriage or adoption, not more remote than first cousin); (c) transfers of Lock-Up Securities to a charity or educational institution; (d) if the undersigned is a corporation, partnership, limited liability company or other business entity, (i) any transfers of Lock-Up Securities to another corporation, partnership or other business entity that controls, is controlled by or is under common control with the undersigned or (ii) distributions of Lock-Up Securities to members, partners, stockholders, subsidiaries or affiliates (as defined in Rule 405 promulgated under the Securities Act of 1933, as amended) of the undersigned; (e) if the undersigned is a trust, to a trustee or beneficiary of the trust; provided that in the case of any transfer pursuant to the foregoing clauses (b), (c) (d) or (e), (i) any such transfer shall not involve a disposition for value, (ii) each transferee shall sign and deliver to the Representative a lock-up agreement substantially in the form of this lock-up agreement and (iii) no filing under Section 13 or Section 16(a) of the Exchange Act or other public announcement shall be required or shall be voluntarily made; (f) the receipt by the undersigned from the Company of Common Shares upon the vesting of restricted stock awards or stock units or upon the exercise of options to purchase the Company’s Common Shares issued under an equity incentive plan of the Company or an employment arrangement described in the Pricing Prospectus (as defined in the Underwriting Agreement) (the “**Plan Shares**”) or the transfer of Common Shares or any securities convertible into Common Shares to the Company upon a vesting event of the Company’s securities or upon the exercise of options to purchase the Company’s securities, in each case on a “cashless” or “net exercise” basis or to cover tax obligations of the undersigned in connection with such vesting or exercise, but only to the extent such right expires during the Lock-up Period, provided that no filing under Section 13 or Section 16(a) of the Exchange Act or other public announcement shall be required or shall be voluntarily made within three (3) months after the date of the Underwriting Agreement, and after such three (3) month period, if the undersigned is required to file a report under Section 13 or Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of Common Shares during the Lock-Up Period, the undersigned shall include a statement in such schedule or report to the effect that the purpose of such transfer was to cover tax withholding obligations of the undersigned in connection with such vesting or exercise and, provided further, that the Plan Shares shall be subject to the terms of this lock-up agreement; (g) the transfer of Lock-Up Securities pursuant to agreements described in the Pricing Prospectus under which the Company has the option to repurchase such securities or a right of first refusal with respect to the transfer of such securities, provided that if the undersigned is required to file a report under Section 13 or Section 16(a) of the Exchange Act reporting a reduction in beneficial ownership of Common Shares during the Lock-Up Period, the undersigned shall include a statement in such schedule or report describing the purpose of the transaction; (h) the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of Lock-Up Securities, provided that (i) such plan does not provide for the transfer of Lock-Up Securities during the Lock-Up Period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required of or voluntarily made by or on behalf of the undersigned or the Company regarding the establishment of such plan, such public announcement or filing shall include a statement to the effect that no transfer of Lock-Up Securities may be made under such plan during the Lock-Up Period; (i) the transfer of Lock-Up Securities that occurs by operation of law, such as pursuant to a qualified domestic order or in connection with a divorce settlement, provided that the transferee agrees to sign and deliver a lock-up agreement substantially in the form of this lock-up agreement for the balance of the Lock-Up Period, and provided further, that any filing under Section 13 or Section 16(a) of the Exchange Act that is required to be made during the Lock-Up Period as a result of such transfer shall include a statement that such transfer has occurred by operation of law; and (j) the transfer of Lock-Up Securities pursuant to a bona fide third party tender offer, merger, consolidation or other similar transaction made to all holders of the Common Shares involving a change of control (as defined below) of the Company after the closing of the Public Offering and approved by the Company’s board of directors; provided that in the event that the tender offer, merger, consolidation or other such transaction is not completed, the Lock-Up Securities owned by the undersigned shall remain subject to the restrictions contained in this lock-up agreement. For purposes of clause (j) above, “change of control” shall mean the consummation of any bona fide third party tender offer, merger, amalgamation, consolidation or other similar transaction the result of which is that any “person” (as defined in Section 13(d)(3) of the Exchange Act), or group of persons, becomes the beneficial owner (as defined in Rules 13d-3 and 13d-5 of the Exchange Act) of a majority of total voting power of the voting shares of the Company. The undersigned also agrees and consents to the entry of stop transfer instructions with the Company’s transfer agent and registrar against the transfer of the undersigned’s Lock-Up Securities except in compliance with this lock-up agreement.

If (i) during the last 17 days of the Lock-Up Period, the Company issues an earnings release or material news or a material event relating to the Company occurs, or (ii) prior to the expiration of the Lock-Up Period, the Company announces that it will release earnings results or becomes aware that material news or a material event will occur during the 16-day period beginning on the last day of the Lock-Up Period, the restrictions imposed by this lock-up agreement shall continue to apply until the expiration of the 18-day period beginning on the issuance of the earnings release or the occurrence of such material news or material event, as applicable, unless the Representative waives, in writing, such extension.

The undersigned agrees that, prior to engaging in any transaction or taking any other action that is subject to the terms of this lock-up agreement during the period from the date hereof to and including the 34th day following the expiration of the initial Lock-Up Period, the undersigned will give notice thereof to the Company and will not consummate any such transaction or take any such action unless it has received written confirmation from the Company that the Lock-Up Period (as may have been extended pursuant to the previous paragraph) has expired.

If the undersigned is an officer or director of the Company, (i) the undersigned agrees that the foregoing restrictions shall be equally applicable to any issuer-directed or “friends and family” Securities that the undersigned may purchase in the Public Offering; (ii) the Representative agrees that, at least three (3) business days before the effective date of any release or waiver of the foregoing restrictions in connection with a transfer of Lock-Up Securities, the Representative will notify the Company of the impending release or waiver; and (iii) the Company has agreed in the Underwriting Agreement to announce the impending release or waiver by press release through a major news service at least two (2) business days before the effective date of the release or waiver. Any release or waiver granted by the Representative hereunder to any such officer or director shall only be effective two (2) business days after the publication date of such press release. The provisions of this paragraph will not apply if (a) the release or waiver is effected solely to permit a transfer of Lock-Up Securities not for consideration and (b) the transferee has agreed in writing to be bound by the same terms described in this lock-up agreement to the extent and for the duration that such terms remain in effect at the time of such transfer.

The undersigned understands that the Company and the Representative are relying upon this lock-up agreement in proceeding toward consummation of the Public Offering. The undersigned further understands that this lock-up agreement is irrevocable and shall be binding upon the undersigned’s heirs, legal representatives, successors and assigns.

The undersigned understands that, if the Underwriting Agreement is not executed by [DATE], or if the Underwriting Agreement (other than the provisions thereof which survive termination) shall terminate or be terminated prior to payment for and delivery of the Common Shares to be sold thereunder, then this lock-up agreement shall be void and of no further force or effect.

Whether or not the Public Offering actually occurs depends on a number of factors, including market conditions. Any Public Offering will only be made pursuant to an Underwriting Agreement, the terms of which are subject to negotiation between the Company and the Representative.

Very truly yours,

(Name - Please Print)

(Signature)

(Name of Signatory, in the case of entities - Please Print)

(Title of Signatory, in the case of entities - Please Print)

Address:

EXHIBIT C

Form of Press Release

ALTAMIRA THERAPEUTICS LTD.

[Date]

Altamira Therapeutics Ltd. (the “Company”) announced today that ThinkEquity LLC, acting as representative for the underwriters in the Company’s recent public offering of _____ common shares of the Company, is [waiving] [releasing] a lock-up restriction with respect to _____ common shares of the Company held by [certain officers or directors] [an officer or director] of the Company. The [waiver] [release] will take effect on _____, 20____, and the shares may be sold on or after such date.

This press release is not an offer or sale of the securities in the United States or in any other jurisdiction where such offer or sale is prohibited, and such securities may not be offered or sold in the United States absent registration or an exemption from registration under the Securities Act of 1933, as amended.

EXHIBIT D

Form of Opinion of Counsel

Ex. D-1

EXHIBIT E

Bermuda Counsel Opinion

Ex. E-1

EXHIBIT F

FDA COUNSEL OPINION

Except as set forth in the Prospectus Supplement, the Company (a) is in all material respects in compliance with the provisions of all laws relating to the regulation of the Company's products, including the Federal Food, Drug, and Cosmetic Act (the "FDC Act") and all state laws comparable to the FDC Act, the rules and regulations promulgated thereunder and all rules and regulations promulgated by the United States Food and Drug Administration ("FDA") and all comparable state regulatory authorities and (b) has all authorizations, approvals, consents, orders, registrations, licenses or permits of any court or the FDA and all state regulatory authorities comparable to the FDA which are necessary or required for it to conduct its current business in material compliance with the FDC Act or comparable state law.

Based on my review of the statements in the Prospectus Supplement under the captions "Risk Factors – Risks Related to the Regulatory Approval of Products or Product Candidates" "Business - Government Regulation and the last paragraph under each of the Options "Business – Our Products and Product Candidates - Bentrío (AM301) in the protection against airborne allergens and viruses – Our Solution Bentrío" and "Business – Our Products and Product Candidates - Keyzilen in Tinnitus" (the "Covered Disclosures"), the Covered Disclosures are correct and complete in all material respects.

Negative Assurances

We advise you that on the basis of our review of the Registration Statement, the Prospectus and the Disclosure Package and our participation in their preparation, nothing has come to our attention that causes us to believe that the Registration Statement, at the time the Registration Statement became effective, contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein not misleading with respect to the General Disclosures, or that the Prospectus or any amendment or supplement thereto, at the time the Prospectus was issued, at the time any such amendment or supplement was issued or at the Applicable Time, included or includes an untrue statement of a material fact or omitted or omits to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading with respect to the General Disclosures. Also, nothing has come to our attention that causes us to believe, based upon the procedures described in this opinion letter, that either the Registration Statement, the Prospectus and the Disclosure Package, as of the Applicable Time and Closing Date, contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein, in light of the circumstances in which they were made, not misleading with respect to the General Disclosures.

This letter is being furnished by me solely for the benefit of the several Underwriters as underwriters in connection with the sale to you of the Company's Shares pursuant to the Underwriting Agreement, and it may not be relied on for any other purpose by you or anyone else, other than Blank Rome LLP in connection with providing their opinion to the Underwriters. It should not be quoted in whole or in part or otherwise be referred to, nor be filed with nor furnished to any governmental agency or other person or entity, without my prior written consent.

EXHIBIT G

IP COUNSEL OPINION

Based on our review of the statements under the caption “Risk Factors – Risks Relating to Intellectual Property” and the caption “Business - Intellectual Property” of the Registration Statement, the Prospectus and the Pricing Disclosure Package (collectively, the “Covered Disclosures”), the Covered Disclosures are correct and complete in all material respects.

We are not representing the Company in: (a) any pending or overtly threatened governmental proceedings relating to the Company’s patents, potential affiliations or other intellectual property (“Company Intellectual Property”) or (b) any (i) pending or overtly threatened claim, action, suit, or proceeding by a non-governmental third party that asserts infringement by the Company of any third party patent rights or (ii) pending or contemplated claim, action, suit, or proceeding by the Company, that asserts infringement relating to any of the Company Intellectual Property.

Negative Assurance [Note: a separate negative assurance for the Covered Disclosures is not required if the IP opinion is given by company counsel]

We advise you that on the basis of our review of the Registration Statement, the Prospectus and the Disclosure Package and our participation in their preparation, nothing has come to our attention that causes us to believe that the Registration Statement, at the time the Registration Statement became effective, contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein not misleading with respect to the Covered Disclosures, or that the Prospectus or any amendment or supplement thereto, at the time the Prospectus was issued, at the time any such amendment or supplement was issued or at the Applicable Time, included or includes an untrue statement of a material fact or omitted or omits to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading with respect to the Covered Disclosures. Also, nothing has come to our attention that causes us to believe, based upon the procedures described in this opinion letter, that either the Registration Statement, the Prospectus and the Disclosure Package, as of the Applicable Time and Closing Date, contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein, in light of the circumstances in which they were made, not misleading with respect to the Covered Disclosures.

This letter is being furnished by me solely for the benefit of the several Underwriters as underwriters in connection with the sale to you of the Company’s Shares and Warrants pursuant to the Underwriting Agreement, and it may not be relied on for any other purpose by you or anyone else, other than Blank Rome LLP in connection with providing their opinion to the Underwriters. It should not be quoted in whole or in part or otherwise be referred to, nor be filed with nor furnished to any governmental agency or other person or entity, without my prior written consent.

WARRANT AGENT AGREEMENT

WARRANT AGENT AGREEMENT (this “Warrant Agreement”) dated as of _____, 2023 (the “Issuance Date”) between Altamira Therapeutics Ltd., an exempted company limited by shares incorporated in Bermuda (the “Company”), and American Stock Transfer & Trust Company, LLC (the “Warrant Agent”).

RECITALS

WHEREAS, pursuant to the terms of that certain Underwriting Agreement (“Underwriting Agreement”), dated _____, 2023, by and among the Company and ThinkEquity LLC, as representative of the underwriters set forth therein, the Company is engaged in a public offering (the “Offering”) of up to _____ common shares (the “Shares”) par value CHF 0.20 per share (the “Common Stock”), of the Company and/or pre-funded warrants to purchase _____ shares of Common Stock (the “Pre-Funded Warrants”) and warrants (the “Public Warrants”) to purchase up to _____ shares of Common Stock (the “Public Warrant Shares”), including Shares, Pre-Funded Warrants and Warrants issuable pursuant to the underwriters’ over-allotment option;

WHEREAS, the Company has filed with the Securities and Exchange Commission (the “Commission”) a Registration Statement on Form F-1 (Registration No. 333-269823) (as the same may be amended from time to time, the “Registration Statement”) for the registration under the Securities Act of 1933, as amended (the “Securities Act”), of the Shares, the Pre-Funded Warrants, the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants, the Public Warrants and the Public Warrant Shares, and such Registration Statement was declared effective on _____, 2023;

WHEREAS, the Company desires the Warrant Agent to act on behalf of the Company, and the Warrant Agent is willing to so act, in accordance with the terms set forth in this Warrant Agreement, in connection with the issuance, registration, transfer, exchange and exercise of the Warrants;

WHEREAS, the Company desires to provide for the provisions of the Warrants, the terms upon which they shall be issued and exercised, and the respective rights, limitation of rights, and immunities of the Company, the Warrant Agent, and the holders of the Warrants; and

WHEREAS, all acts and things have been done and performed which are necessary to make the Warrants the valid, binding and legal obligations of the Company, and to authorize the execution and delivery of this Warrant Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual agreements herein contained, the parties hereto agree as follows:

1. Appointment of Warrant Agent. The Company hereby appoints the Warrant Agent to act as agent for the Company with respect to the Warrants, and the Warrant Agent hereby accepts such appointment and agrees to perform the same in accordance with the express terms and conditions set forth in this Warrant Agreement (and no implied terms or conditions).

2. Warrants.

2.1. Form of Warrants. The Warrants shall be registered securities and shall be initially evidenced by a global Warrant certificate (“Global Certificate”) in the form of Annex A to this Warrant Agreement, which shall be deposited on behalf of the Company with a custodian for The Depository Trust Company (“DTC”) and registered in the name of Cede & Co., a nominee of DTC. If DTC subsequently ceases to make its settlement system available for the Warrants, the Company may instruct the Warrant Agent regarding making arrangements for book-entry settlement. In the event that the Warrants are not eligible for, or it is no longer necessary to have the Warrants available in, registration in the name of Cede & Co., a nominee of DTC, the Company may instruct the Warrant Agent to provide written instructions to DTC to deliver to the Warrant Agent for cancellation the Global Certificate, and the Company shall instruct the Warrant Agent to deliver to each Holder (as defined below) separate certificates evidencing Warrants (“Definitive Certificates”) and, together with the Global Certificate, “Warrant Certificates”), in the form of Annex C to this Warrant Agreement. The Warrants represented by the Global Certificate are referred to as “Global Warrants”.

2.2. Issuance and Registration of Warrants.

2.2.1. Warrant Register. The Warrant Agent shall maintain books (“Warrant Register”) for the registration of original issuance and the registration of transfer of the Warrants. Any Person in whose name ownership of a beneficial interest in the Warrants evidenced by a Global Certificate is recorded in the records maintained by DTC or its nominee shall be deemed the “beneficial owner” thereof, provided that all such beneficial interests shall be held through a Participant (as defined below), which shall be the registered holder of such Warrants.

2.2.2. Issuance of Warrants. Upon the initial issuance of the Warrants, the Warrant Agent shall issue the Global Certificate and deliver the Warrants in the DTC settlement system in accordance with written instructions delivered to the Warrant Agent by the Company. Ownership of beneficial interests in the Warrants shall be shown on, and the transfer of such ownership shall be effected through, records maintained (i) by DTC and (ii) by institutions that have accounts with DTC (each, a “Participant”), subject to a Holder’s right to elect to receive a Warrant in certificated form in the form of Annex C to this Warrant Agreement. Any Holder desiring to elect to receive a Warrant in certificated form shall make such request in writing delivered to the Warrant Agent pursuant to Section 2.2.8, and shall surrender to the Warrant Agent the interest of the Holder on the books of the Participant evidencing the Warrants which are to be represented by a Definitive Certificate through the DTC settlement system. Thereupon, the Warrant Agent shall countersign and deliver to the Person entitled thereto a Warrant Certificate or Warrant Certificates, as the case may be, as so requested.

2.2.3. Beneficial Owner; Holder. Prior to due presentment for registration of transfer of any Warrant, the Company and the Warrant Agent may deem and treat the Person in whose name that Warrant shall be registered on the Warrant Register (the “Holder,” which term shall include a Holder’s transferees, successors and assigns and a “Holder” shall include, if the Warrants are held in “street name,” a Participant or a designee appointed by such Participant) as the absolute owner of such Warrant for purposes of any exercise thereof, and for all other purposes, and neither the Company nor the Warrant Agent shall be affected by any notice to the contrary. Notwithstanding the foregoing, nothing herein shall prevent the Company, the Warrant Agent or any agent of the Company or the Warrant Agent from giving effect to any written certification, proxy or other authorization furnished by DTC governing the exercise of the rights of a holder of a beneficial interest in any Warrant. The rights of beneficial owners in a Warrant evidenced by the Global Certificate shall be exercised by the Holder or a Participant through the DTC system, except to the extent set forth herein or in the Global Certificate.

2.2.4. Execution. The Warrant Certificates shall be executed on behalf of the Company by any authorized officer of the Company (an “Authorized Officer”), which need not be the same authorized signatory for all of the Warrant Certificates, either manually or by facsimile signature. The Warrant Certificates shall be countersigned by an authorized signatory of the Warrant Agent, which need not be the same signatory for all of the Warrant Certificates, and no Warrant Certificate shall be valid for any purpose unless so countersigned. In case any Authorized Officer of the Company that signed any of the Warrant Certificates ceases to be an Authorized Officer of the Company before countersignature by the Warrant Agent and issuance and delivery by the Company, such Warrant Certificates, nevertheless, may be countersigned by the Warrant Agent, issued and delivered with the same force and effect as though the person who signed such Warrant Certificates had not ceased to be such officer of the Company; and any Warrant Certificate may be signed on behalf of the Company by any person who, at the actual date of the execution of such Warrant Certificate, shall be an Authorized Officer of the Company authorized to sign such Warrant Certificate, although at the date of the execution of this Warrant Agreement any such person was not such an Authorized Officer.

2.2.5. Registration of Transfer. At any time at or prior to the Expiration Date (as defined below), a transfer of any Warrants may be registered and any Warrant Certificate or Warrant Certificates may be split up, combined or exchanged for another Warrant Certificate or Warrant Certificates evidencing the same number of Warrants as the Warrant Certificate or Warrant Certificates surrendered. Any Holder desiring to register the transfer of Warrants or to split up, combine or exchange any Warrant Certificate shall make such request in writing delivered to the Warrant Agent, and shall surrender to the Warrant Agent the Warrant Certificate or Warrant Certificates evidencing the Warrants the transfer of which is to be registered or that is or are to be split up, combined or exchanged. Thereupon, the Warrant Agent shall countersign and deliver to the Person entitled thereto a Warrant Certificate or Warrant Certificates, as the case may be, as so requested. The Warrant Agent may require reasonable and customary payment with respect to a registration of transfer of Warrants or a split-up, combination or exchange of a Warrant Certificate (but, for purposes of clarity, not upon the exercise of the Warrants and issuance of Warrant Shares to the Holder), of a sum sufficient to cover any tax or governmental charge that may be imposed in connection with such registration of transfer, split-up, combination or exchange, together with reimbursement to the Warrant Agent of all reasonable expenses incidental thereto. All such fees and expenses shall be paid by the Company, and not by the Holder.

2.2.6. Loss, Theft and Mutilation of Warrant Certificates. Upon receipt by the Company and the Warrant Agent of evidence reasonably satisfactory to them of the loss, theft, destruction or mutilation of a Warrant Certificate, and, in case of loss, theft or destruction, of indemnity or security in customary form and amount, and reimbursement to the Company and the Warrant Agent of all reasonable expenses incidental thereto, and upon surrender to the Warrant Agent and cancellation of the Warrant Certificate if mutilated, the Warrant Agent shall, on behalf of the Company, countersign and deliver a new Warrant Certificate of like tenor to the Holder in lieu of the Warrant Certificate so lost, stolen, destroyed or mutilated. The Warrant Agent may charge the Holder an administrative fee for processing the replacement of lost Warrant Certificates, which shall be charged only once in instances where a single surety bond obtained covers multiple certificates. The Warrant Agent may receive compensation from the surety companies or surety bond agents for administrative services provided to them.

2.2.7. Proxies. The Holder of a Warrant may grant proxies or otherwise authorize any Person, including the Participants and beneficial holders that may own interests through the Participants, to take any action that a Holder is entitled to take under this Warrant Agreement or the Warrants; provided, however, that at all times that Warrants are evidenced by a Global Certificate, exercise of those Warrants shall be effected on their behalf by Participants through DTC in accordance the procedures administered by DTC.

2.2.8. Warrant Certificate Request. A Holder has the right to elect at any time or from time to time a Warrant Exchange (as defined below) pursuant to a Warrant Certificate Request Notice (as defined below). Upon written notice by a Holder to the Warrant Agent for the exchange of some or all of such Holder's Global Warrants for a Definitive Certificate evidencing the same number of Warrants, which request shall be in the form attached hereto as Annex E (a "Warrant Certificate Request Notice") and the date of delivery of such Warrant Certificate Request Notice by the Holder, the "Warrant Certificate Request Notice Date" and the deemed surrender upon delivery by the Holder of a number of Global Warrants for the same number of Warrants evidenced by a Definitive Certificate, a "Warrant Exchange"), the Warrant Agent shall promptly effect the Warrant Exchange and shall promptly issue and deliver to the Holder a Definitive Certificate for such number of Warrants in the name set forth in the Warrant Certificate Request Notice. Such Definitive Certificate shall be dated the original issue date of the Warrants, shall be manually executed by an authorized signatory of the Company, shall be in the form attached hereto as Annex C, and shall be reasonably acceptable in all respects to such Holder. In connection with a Warrant Exchange, the Company agrees to deliver, or to direct the Warrant Agent to deliver, the Definitive Certificate to the Holder within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined below) of the Warrant Certificate Request Notice pursuant to the delivery instructions in the Warrant Certificate Request Notice ("Warrant Certificate Delivery Date"). If the Company fails for any reason to deliver to the Holder the Definitive Certificate subject to the Warrant Certificate Request Notice by the Warrant Certificate Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares evidenced by such Definitive Certificate (based on the VWAP of the Common Stock on the Warrant Certificate Request Notice Date), \$10 per Business Day for each Business Day after such Warrant Certificate Delivery Date until such Definitive Certificate is delivered or, prior to delivery of such Warrant Certificate, the Holder rescinds such Warrant Exchange. The Company covenants and agrees that, upon the date of delivery of the Warrant Certificate Request Notice, the Holder shall be deemed to be the holder of the Definitive Certificate and, notwithstanding anything to the contrary set forth herein, the Definitive Certificate shall be deemed for all purposes to contain all of the terms and conditions of the Warrants evidenced by such Warrant Certificate and the terms of this Warrant Agreement, other than Sections 3.3 and 8 herein, which shall not apply to the Warrants evidenced by the Definitive Certificate. For purposes of clarity, if there is a conflict between the express terms of this Warrant Agreement and the Warrant Certificate in the form of Annex C hereto with respect to terms of the Warrants, the terms of the Warrant Certificate shall govern and control.

3. Terms and Exercise of Warrants.

3.1. Exercise Price. Each Warrant shall entitle the Holder, subject to the provisions of the applicable Warrant Certificate and of this Warrant Agreement, to purchase from the Company the number of shares of Common Stock stated therein, at the price of \$____ per whole share, subject to the subsequent adjustments provided in Section 4 hereof, provided that such price is always at least the par value per share. The term "Exercise Price" as used in this Warrant Agreement refers to the price per share at which shares of Common Stock may be purchased at the time a Warrant is exercised.

3.2. Duration of Warrants. Warrants may be exercised only during the period ("Exercise Period") commencing on the Issuance Date and terminating at 5:00 P.M., New York City time (the "close of business") on _____, 2028 ("Expiration Date")¹. Each Warrant not exercised on or before the Expiration Date shall become void, and all rights thereunder and all rights in respect thereof under this Warrant Agreement shall cease at the close of business on the Expiration Date.

3.3. Exercise of Warrants.

3.3.1. Exercise and Payment.

(a) Exercise of the purchase rights represented by a Warrant may be made, in whole or in part, at any time or times during the Exercise Period by delivery to the Company or the Warrant Agent of the Notice of Exercise in the form annexed as Annex B hereto (the "Notice of Exercise"). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period following the date the Holder delivers the Notice of Exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier's check drawn on a United States bank unless the cashless exercise procedure specified in Section 3.3.6 below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise form be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender a Warrant Certificate to the Company until the Holder has purchased all of the Warrant Shares available thereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender such Warrant to the Company for cancellation within three (3) Trading Days of the date the final Notice of Exercise is delivered to the Company. Partial exercises of a Warrant resulting in purchases of a portion of the total number of Warrant Shares available thereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Business Day of receipt of such notice. **The Holder and any assignee, by acceptance of a Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face thereof.**

(b) Notwithstanding the foregoing in this Section 3.3.1, a Holder whose interest in a Warrant is a beneficial interest in certificate(s) representing such Warrant held in registered form through DTC (or another established clearing corporation performing similar functions), shall effect exercises made pursuant to this Section 3.3.1 by delivering to DTC (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by DTC (or such other clearing corporation, as applicable), subject to a Holder's right to elect to receive a Warrant in certificated form pursuant to the terms of this Warrant Agreement, in which case this sentence shall not apply. Upon giving irrevocable instructions to its Participant to exercise Warrants, solely for purposes of Regulation SHO, the holder whose interest in the Warrant is a beneficial interest shall be deemed to have exercised such Warrant, regardless of when the applicable Warrant Shares are delivered to such holder.

¹ The five-year anniversary of the Initial Exercise Date;

3.3.2. Issuance of Warrant Shares.

(a) The Warrant Agent shall, on the Trading Day following the date of exercise of any Warrant, advise the Company, and the transfer agent and registrar for the Company's Common Stock (the "Transfer Agent"), in respect of (i) the number of Warrant Shares indicated on the Notice of Exercise as issuable upon such exercise with respect to such exercised Warrants, (ii) the instructions of the Holder or Participant, as the case may be, provided to the Warrant Agent with respect to the delivery of the Warrant Shares and the number of Warrants that remain outstanding after such exercise and (iii) such other information as the Company or the Transfer Agent shall reasonably request.

(b) The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder's or its designee's balance account with DTC through its Deposit or Withdrawal at Custodian system ("DWAC") if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) the Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company's share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is the earlier of (i) two (2) Trading Days of, and (ii) the number of Trading Days comprising the Standard Settlement Period after, the delivery to the Company of the Notice of Exercise (such date, the "Warrant Share Delivery Date"). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which the Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received within the earlier of (i) two (2) Trading Days of and (ii) the number of Trading Days comprising the Standard Settlement Period following delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as the Warrants remains outstanding and exercisable. As used herein, "Standard Settlement Period" means the standard settlement period, expressed in a number of Trading Days, on the Company's primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise.

3.3.3. Valid Issuance. All Warrant Shares issued by the Company upon the proper exercise of a Warrant in conformity with this Warrant Agreement shall be validly issued, fully paid and non-assessable.

3.3.4. No Fractional Exercise. No fractional Warrant Shares will be issued upon the exercise of the Warrant. If, by reason of any adjustment made pursuant to Section 4, a Holder would be entitled, upon the exercise of such Warrant, to receive a fractional interest in a share, the Company shall, upon such exercise, round up or down, as applicable, to the nearest whole number the number of Warrant Shares to be issued to such Holder.

3.3.5. No Transfer Taxes. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event Warrant Shares are to be issued in a name other than the name of the Holder, the Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the DTC (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

3.3.6. Restrictive Legend Events; Cashless Exercise Under Certain Circumstances.

(a) The Company shall use its reasonable best efforts to maintain the effectiveness of the Registration Statement and the current status of the prospectus included therein or to file and maintain the effectiveness of another registration statement and another current prospectus covering the Warrants and the Warrant Shares at any time that the Warrants are exercisable. The Company shall provide to the Warrant Agent and each Holder prompt written notice of any time that the Company is unable to deliver the Warrant Shares via DTC transfer or otherwise without restrictive legend because (A) the Commission has issued a stop order with respect to the Registration Statement, (B) the Commission otherwise has suspended or withdrawn the effectiveness of the Registration Statement, either temporarily or permanently, (C) the Company has suspended or withdrawn the effectiveness of the Registration Statement, either temporarily or permanently, (D) the prospectus contained in the Registration Statement is not available for the issuance of the Warrant Shares to the Holder or (E) otherwise (each a “Restrictive Legend Event”). To the extent that the Warrants cannot be exercised as a result of a Restrictive Legend Event, the Company shall, at the election of the Holder, which shall be given within five (5) days of receipt of such notice of the Restrictive Legend Event, either (A) rescind the previously submitted Notice of Exercise and the Company shall return all consideration paid by registered holder for such shares upon such rescission or (B) treat the attempted exercise as a cashless exercise as described in paragraph (ii) below and refund the cash portion of the exercise price to the Holder.

(b) If a Restrictive Legend Event has occurred, the Warrant may also be exercisable on a cashless basis. Notwithstanding anything herein to the contrary, but without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to this Section 3.3.6(b) or to receive cash payments pursuant to Section 3.3.2(b) and Section 3.3.8 herein, the Company shall not be required to make any cash payments or net cash settlement to the Holder in lieu of delivery of the Warrant Shares. Upon a “cashless exercise”, the Holder shall be entitled to receive the number of Warrant Shares equal to the quotient (if such quotient would be a positive number) obtained by dividing (A-B) (X) by (A), where:

- (A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 3.3.1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 3.3.1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 3.3.1(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 3.3.1(a) hereof after the close of “regular trading hours” on such Trading Day;
- (B) = the Exercise Price of the Warrant, as adjusted as set forth herein; and
- (X) = the number of Warrant Shares that would be issuable upon exercise of the Warrant in accordance with the terms of the Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

(c) If the Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that, in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised and the Company agrees not to take any position contrary thereto. Upon receipt of a Notice of Exercise for a cashless exercise, the Warrant Agent will promptly deliver a copy of the Notice of Exercise to the Company to confirm the number of Warrant Shares issuable in connection with the cashless exercise. The Company shall calculate and transmit to the Warrant Agent in a written notice, and the Warrant Agent shall have no duty, responsibility or obligation under this Section 3.3.6 to calculate, the number of Warrant Shares issuable in connection with any cashless exercise. The Warrant Agent shall be entitled to rely conclusively on any such written notice provided by the Company, and the Warrant Agent shall not be liable for any action taken, suffered or omitted to be taken by it in accordance with such written instructions or pursuant to this Warrant Agreement. Notwithstanding anything herein to the contrary, on the Termination Date, the Warrant shall be automatically exercised via cashless exercise pursuant to this Section 3.3.6.

3.3.7. Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the number of Warrant Shares issuable in connection with any exercise, the Company shall promptly deliver to the Holder the number of Warrant Shares that are not disputed.

3.3.8. Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 3.3.2(b) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

3.3.9. Beneficial Ownership Limitation. The Company shall not effect any exercise of a Warrant, and a Holder shall not have the right to exercise any portion of a Warrant, pursuant to Section 3 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of such Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, non-exercised portion of such Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or non-converted portion of any other securities of the Company (including, without limitation, any other securities of the Company which would entitle the holder thereof to acquire at any time shares of Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, shares of Common Stock ("Common Stock Equivalents")) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 3.3.9, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 3.3.9 applies, the determination of whether a Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of a Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether a Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of a Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 3.3.9, in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within two (2) Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including such Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of a Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 3.3.9, provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of the Warrant held by the Holder and the provisions of this Section 3.3.9 shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 3.3.9 to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of a Warrant.

4. Adjustments.

4.1. Adjustment upon Subdivisions or Combinations. If the Company, at any time while the Warrants are outstanding: (i) pays a stock dividend (bonus issue) or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of the Warrants), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (consolidates) (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of share capital of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock and such other share capital of the Company (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock and such other share capital of the Company (excluding treasury shares, if any) outstanding immediately after such event, and the number of shares issuable upon exercise of each Warrant shall be proportionately adjusted such that the aggregate Exercise Price of such Warrant shall remain unchanged. Any adjustment made pursuant to this Section 4.1 shall become effective immediately after the record date for the determination of shareholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination (consolidation) or re-classification.

4.2. Adjustment for Other Distributions.

4.2.1. Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 4.1 above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase shares, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of a Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

4.2.2. Dividends. If the Company, at any time during the Exercise Period, shall pay a dividend in cash, securities or other assets to all holders of Common Stock (or other shares of the Company's share capital into which the Warrants are convertible), other than a transaction described in Sections 4.1, 4.2.1 or 4.3 (any such non-excluded event being referred to herein as a "Dividend"), then the Exercise Price shall be decreased, effective immediately after the effective date of such Dividend, by the quotient of (i) the gross amount of cash and/or fair market value (as determined by the Company's Board of Directors, in good faith) of all securities or other assets paid to the holders of Common Stock (or other shares of the Company's capital stock into which the Warrants are convertible) in respect of such Dividend divided by (ii) the sum of the number of shares of Common Stock (or other shares of the Company's share capital into which the Warrants are convertible) outstanding at the time of the Dividend plus the number of shares of Common Stock then issuable upon exercise of all outstanding Warrants, provided, that the Exercise Price shall not be reduced below zero.

4.3. **Fundamental Transaction.** If, at any time while the Warrants are outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which all holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which all outstanding shares of Common Stock are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “**Fundamental Transaction**”), then, upon any subsequent exercise of a Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 3.3.9 on the exercise of a Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “**Alternate Consideration**”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which the Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 3.3.9 on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase the Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value of the remaining unexercised portion of the Warrant on the date of the consummation of such Fundamental Transaction; provided, however, if the Fundamental Transaction is not within the Company’s control, including not approved by the Company’s Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity, as of the date of consummation of such Fundamental Transaction, the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of the Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock of the Successor Entity (which Successor Entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction. “Black Scholes Value” means the value of this Warrant based on the Black and Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“Bloomberg”) determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg as of the Trading Day immediately following the public announcement of the applicable contemplated Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the greater of (x) the last VWAP immediately prior to the public announcement of such contemplated Fundamental Transaction and (y) the last VWAP immediately prior to the consummation of such Fundamental Transaction and (D) a remaining option time equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds within five Business Days of the Holder’s election (or, if later, on the effective date of the Fundamental Transaction). The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “**Successor Entity**”) to assume in writing all of the obligations of the Company under the Warrants in accordance with the provisions of this Section 4.3 pursuant to written agreements pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for the Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to the Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of the Warrant (without regard to any limitations on the exercise of the Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of the Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of the Warrants referring to the “**Company**” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under the Warrants with the same effect as if such Successor Entity had been named as the Company therein. The Company shall instruct the Warrant Agent in writing to mail by first class mail, postage prepaid, to each Holder, written notice of the execution of any such amendment, supplement or agreement with the Successor Entity. Any supplemented or amended agreement entered into by the successor corporation or transferee shall provide for adjustments, which shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 4.3. The Warrant Agent shall have no duty, responsibility or obligation to determine the correctness of any provisions contained in such agreement or such notice, including but not limited to any provisions relating either to the kind or amount of securities or other property receivable upon exercise of warrants or with respect to the method employed and provided therein for any adjustments, and shall be entitled to rely conclusively for all purposes upon the provisions contained in any such agreement. The provisions of this Section 4.3 shall similarly apply to successive reclassifications, changes, consolidations, mergers, sales and conveyances of the kind described above.

4.4. Notices to Holder.

4.4.1. Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 4, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

4.4.2. Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of share capital of any class or of any rights, (D) the approval of any shareholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant Agreement constitutes, or contains, material, non-public information regarding the Company or any of its subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. Provided such notice occurs within the Exercise Period, the Holder shall remain entitled to exercise its Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

4.5. Other Events. If any event occurs of the type contemplated by the provisions of Sections 4.1 or 4.2 but not expressly provided for by such provisions (including, without limitation, the granting of stock appreciation rights, Adjustment Rights, phantom stock rights or other rights with equity features to all holders of Common Stock for no consideration), then the Company's Board of Directors will, at its discretion and in good faith, make an adjustment in the Exercise Price and the number of Warrant Shares or designate such additional consideration to be deemed issuable upon exercise of a Warrant, so as to protect the rights of the registered Holder. No adjustment to the Exercise Price will be made pursuant to more than one sub-section of this Section 4 in connection with a single issuance.

4.6. Notices of Changes in Warrant. Upon every adjustment of the Exercise Price or the number of Warrant Shares issuable upon exercise of a Warrant, the Company shall give written notice thereof to the Warrant Agent, which notice shall state the Exercise Price resulting from such adjustment and the increase or decrease, if any, in the number of Warrant Shares purchasable at such price upon the exercise of a Warrant, setting forth in reasonable detail the method of calculation and the facts upon which such calculation is based. Upon the occurrence of any event specified in Sections 4.1 or 4.2, then, in any such event, the Company shall give written notice to each Holder, at the last address set forth for such holder in the Warrant Register, as of the record date or the effective date of the event. Failure to give such notice, or any defect therein, shall not affect the legality or validity of such event. The Warrant Agent shall be entitled to rely conclusively on, and shall be fully protected in relying on, any certificate, notice or instructions provided by the Company with respect to any adjustment of the Exercise Price or the number of shares issuable upon exercise of a Warrant, or any related matter, and the Warrant Agent shall not be liable for any action taken, suffered or omitted to be taken by it in accordance with any such certificate, notice or instructions or pursuant to this Warrant Agreement. The Warrant Agent shall not be deemed to have knowledge of any such adjustment unless and until it shall have received written notice thereof from the Company.

5. Restrictive Legends; Fractional Warrants. In the event that a Warrant Certificate surrendered for transfer bears a restrictive legend, the Warrant Agent shall not register that transfer until the Warrant Agent has received an opinion of counsel for the Company stating that such transfer may be made and indicating whether the Warrants must also bear a restrictive legend upon that transfer. The Warrant Agent shall not be required to effect any registration of transfer or exchange which will result in the transfer of or delivery of a Warrant Certificate for a fraction of a Warrant.

6. Other Provisions Relating to Rights of Holders of Warrants.

6.1. No Rights as Shareholder. Except as otherwise specifically provided herein, a Holder, solely in its capacity as a holder of Warrants, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant Agreement be construed to confer upon a Holder, solely in its capacity as the registered holder of Warrants, any of the rights of a shareholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of shares, reclassification of share capital, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights or rights to participate in new issues of shares, or otherwise, prior to the issuance to the Holder of the Warrant Shares which it is then entitled to receive upon the due exercise of Warrants.

6.2. Reservation of Common Stock. The Company shall at all times reserve and keep available a number of its authorized but unissued shares of Common Stock that will be sufficient to permit the exercise in full of all outstanding Warrants issued pursuant to this Warrant Agreement.

7. Concerning the Warrant Agent.

7.1. Any instructions given to the Warrant Agent orally, as permitted by any provision of this Warrant Agreement, shall be confirmed in writing by the Company as soon as practicable. The Warrant Agent shall not be liable or responsible and shall be fully authorized and protected for acting, or failing to act, in accordance with any oral instructions which do not conform with the written confirmation received in accordance with this Section 7.1.

7.2. Whether or not any Warrants are exercised, for the Warrant Agent's services as agent for the Company hereunder, the Company shall pay to the Warrant Agent such fees as may be separately agreed between the Company and Warrant Agent and the Warrant Agent's out of pocket expenses in connection with this Warrant Agreement, including, without limitation, the fees and expenses of the Warrant Agent's counsel. While the Warrant Agent endeavors to maintain out-of-pocket charges (both internal and external) at competitive rates, these charges may not reflect actual out-of-pocket costs, and may include handling charges to cover internal processing and use of the Warrant Agent's billing systems. All amounts owed by the Company to the Warrant Agent under this Warrant Agreement are due within 30 days of the Company's receipt of an invoice. Delinquent payments are subject to a late payment charge of one and one-half percent (1.5%) per month commencing 45 days from the invoice date. The Company agrees to reimburse the Warrant Agent for any attorney's fees and any other costs associated with collecting delinquent payments. No provision of this Warrant Agreement shall require Warrant Agent to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties under this Warrant Agreement or in the exercise of its rights.

7.3. As agent for the Company hereunder, the Warrant Agent:

(a) shall have no duties or obligations other than those specifically set forth herein or as may subsequently be agreed to in writing by the Warrant Agent and the Company;

(b) shall be regarded as making no representations and having no responsibilities as to the validity, sufficiency, value, or genuineness of the Warrants or any Warrant Shares;

(c) shall not be obligated to take any legal action hereunder; if, however, the Warrant Agent determines to take any legal action hereunder, and where the taking of such action might, in its judgment, subject or expose it to any expense or liability it shall not be required to act unless it has been furnished with an indemnity reasonably satisfactory to it;

(d) may rely on and shall be fully authorized and protected in acting or failing to act upon any certificate, instrument, opinion, notice, letter, telegram, telex, facsimile transmission or other document or security delivered to the Warrant Agent and believed by it to be genuine and to have been signed by the proper party or parties;

(e) shall not be liable or responsible for any recital or statement contained in the Registration Statement or any other documents relating thereto;

(f) shall not be liable or responsible for any failure on the part of the Company to comply with any of its covenants and obligations relating to the Warrants, including without limitation obligations under applicable securities laws;

(g) may rely on and shall be fully authorized and protected in acting or failing to act upon the written, telephonic or oral instructions with respect to any matter relating to its duties as Warrant Agent covered by this Warrant Agreement (or supplementing or qualifying any such actions) of officers of the Company, and is hereby authorized and directed to accept instructions with respect to the performance of its duties hereunder from the Company or counsel to the Company, and may apply to the Company, for advice or instructions in connection with the Warrant Agent's duties hereunder, and the Warrant Agent shall not be liable for any delay in acting while waiting for those instructions; any applications by the Warrant Agent for written instructions from the Company may, at the option of the Warrant Agent, set forth in writing any action proposed to be taken or omitted by the Warrant Agent under this Warrant Agreement and the date on or after which such action shall be taken or such omission shall be effective; the Warrant Agent shall not be liable for any action taken by, or omission of, the Warrant Agent in accordance with a proposal included in such application on or after the date specified in such application (which date shall not be less than five (5) Business Days after the date such application is sent to the Company, unless the Company shall have consented in writing to any earlier date) unless prior to taking any such action, the Warrant Agent shall have received written instructions in response to such application specifying the action to be taken or omitted;

(h) may consult with counsel satisfactory to the Warrant Agent, including its in-house counsel, and the advice of such counsel shall be full and complete authorization and protection in respect of any action taken, suffered, or omitted by it hereunder in good faith and in accordance with the advice of such counsel;

(i) may perform any of its duties hereunder either directly or by or through nominees, correspondents, designees, or subagents, and it shall not be liable or responsible for any misconduct or negligence on the part of any nominee, correspondent, designee, or subagent appointed with reasonable care by it in connection with this Warrant Agreement;

(j) is not authorized, and shall have no obligation, to pay any brokers, dealers, or soliciting fees to any Person; and

(k) shall not be required hereunder to comply with the laws or regulations of any country other than the United States of America or any political subdivision thereof.

7.4. In the absence of gross negligence or willful or illegal misconduct on its part, the Warrant Agent shall not be liable for any action taken, suffered, or omitted by it or for any error of judgment made by it in the performance of its duties under this Warrant Agreement. Anything in this Warrant Agreement to the contrary notwithstanding, in no event shall Warrant Agent be liable for special, indirect, incidental, consequential or punitive losses or damages of any kind whatsoever (including but not limited to lost profits), even if the Warrant Agent has been advised of the possibility of such losses or damages and regardless of the form of action. Any liability of the Warrant Agent will be limited in the aggregate to the amount of fees paid by the Company hereunder. The Warrant Agent shall not be liable for any failures, delays or losses, arising directly or indirectly out of conditions beyond its reasonable control including, but not limited to, acts of government, exchange or market ruling, suspension of trading, work stoppages or labor disputes, fires, civil disobedience, riots, rebellions, storms, electrical or mechanical failure, computer hardware or software failure, communications facilities failures including telephone failure, war, terrorism, insurrection, earthquakes, floods, acts of God or similar occurrences.

7.5. In the event any question or dispute arises with respect to the proper interpretation of the Warrants or the Warrant Agent's duties under this Warrant Agreement or the rights of the Company or of any Holder, the Warrant Agent shall not be required to act and shall not be held liable or responsible for its refusal to act until the question or dispute has been judicially settled (and, if appropriate, it may file a suit in interpleader or for a declaratory judgment for such purpose) by final judgment rendered by a court of competent jurisdiction, binding on all Persons interested in the matter which is no longer subject to review or appeal, or settled by a written document in form and substance satisfactory to Warrant Agent and executed by the Company and each such Holder. In addition, the Warrant Agent may require for such purpose, but shall not be obligated to require, the execution of such written settlement by all the Holders and all other Persons that may have an interest in the settlement.

7.6. The Company covenants to indemnify the Warrant Agent and hold it harmless from and against any loss, liability, claim or expense ("Loss") arising out of or in connection with the Warrant Agent's duties under this Warrant Agreement, including the costs and expenses of defending itself against any Loss, unless such Loss shall have been determined by a court of competent jurisdiction to be a result of the Warrant Agent's gross negligence or willful misconduct.

7.7. The Company represents and warrants that (a) it is duly incorporated and validly existing under the laws of its jurisdiction of incorporation, (b) the offer and sale of the Warrants and the execution, delivery and performance of all transactions contemplated thereby (including this Warrant Agreement) have been duly authorized by all necessary corporate action and will not result in a breach of or constitute a default under the memorandum of association, bye-laws or any similar document of the Company or any indenture, agreement or instrument to which it is a party or is bound, (c) this Warrant Agreement has been duly executed and delivered by the Company and constitutes the legal, valid, binding and enforceable obligation of the Company, (d) the Warrants will comply in all material respects with all applicable requirements of law and (e) to the best of its knowledge, there is no litigation pending or threatened as of the date hereof in connection with the offering of the Warrants.

7.8. Set forth in Annex D hereto is a list of the names and specimen signatures of the persons authorized to act for the Company under this Warrant Agreement. The Company shall, from time to time, certify to you the names and signatures of any other persons authorized to act for the Company under this Warrant Agreement.

7.9. The Warrant Agent, or any successor to it hereafter appointed, may resign its duties and be discharged from all further duties and liabilities hereunder after giving thirty (30) days' notice in writing to the Company, or such shorter period of time agreed to by the Company. The Company may terminate the services of the Warrant Agent, or any successor Warrant Agent, after giving thirty (30) days' notice in writing to the Warrant Agent or successor Warrant Agent, or such shorter period of time as agreed. If the office of the Warrant Agent becomes vacant by resignation, termination or incapacity to act or otherwise, the Company shall appoint in writing a successor Warrant Agent in place of the Warrant Agent. If the Company shall fail to make such appointment within a period of thirty (30) days after it has been notified in writing of such resignation or incapacity by the Warrant Agent, then the Warrant Agent or any Holder may apply to any court of competent jurisdiction for the appointment of a successor Warrant Agent at the Company's cost. Pending appointment of a successor to such Warrant Agent, either by the Company or by such a court, the duties of the Warrant Agent shall be carried out by the Company. Any successor Warrant Agent (but not including the initial Warrant Agent), whether appointed by the Company or by such court, shall be a Person organized and existing under the laws of any state of the United States of America, in good standing, and authorized under such laws to exercise corporate trust powers and subject to supervision or examination by federal or state authority. After appointment, any successor Warrant Agent shall be vested with all the authority, powers, rights, immunities, duties, and obligations of its predecessor Warrant Agent with like effect as if originally named as Warrant Agent hereunder, without any further act or deed, and except for executing and delivering documents as provided in the sentence that follows, the predecessor Warrant Agent shall have no further duties, obligations, responsibilities or liabilities hereunder, but shall be entitled to all rights that survive the termination of this Warrant Agreement and the resignation or removal of the Warrant Agent, including but not limited to its right to indemnity hereunder. If for any reason it becomes necessary or appropriate or at the request of the Company, the predecessor Warrant Agent shall execute and deliver, at the expense of the Company, an instrument transferring to such successor Warrant Agent all the authority, powers, and rights of such predecessor Warrant Agent hereunder; and upon request of any successor Warrant Agent the Company shall make, execute, acknowledge, and deliver any and all instruments in writing for more fully and effectually vesting in and confirming to such successor Warrant Agent all such authority, powers, rights, immunities, duties, and obligations.

7.10. In the event a successor Warrant Agent shall be appointed, the Company shall give notice thereof to the predecessor Warrant Agent and the Transfer Agent not later than the effective date of any such appointment.

7.11. Any Person into which the Warrant Agent may be merged or converted or with which it may be consolidated or any Person resulting from any merger, conversion or consolidation to which the Warrant Agent shall be a party or any Person succeeding to the shareowner services business of the Warrant Agent or any successor Warrant Agent shall be the successor Warrant Agent under this Warrant Agreement, without any further act or deed.

8. Miscellaneous Provisions.

8.1. Unless terminated earlier by the parties hereto, this Warrant Agreement shall terminate 90 days after the earlier of the Expiration Date and the date on which no Warrants remain outstanding (the "Termination Date"). On the Business Day following the Termination Date, the Warrant Agent shall deliver to the Company any entitlements, if any, held by the Warrant Agent under this Warrant Agreement. The Warrant Agent's right to be reimbursed for fees, charges and out-of-pocket expenses as provided in Section 7 shall survive the termination of this Warrant Agreement.

8.2. If any provision of this Warrant Agreement shall be held illegal, invalid, or unenforceable by any court, this Warrant Agreement shall be construed and enforced as if such provision had not been contained herein and shall be deemed an Agreement among the parties to it to the full extent permitted by applicable law.

8.3. In the event of inconsistency between this Warrant Agreement and the descriptions in the Registration Statement, as they may from time to time be amended, the terms of this Warrant Agreement shall control.

8.4. Any notice, statement or demand authorized by this Warrant Agreement to be given or made by the Company, the Warrant Agent or by the holder of any Warrant to or on the Company or the Warrant Agent including, without limitation, any Notice of Exercise, shall be in writing and delivered by e-mail, hand or sent by a nationally recognized overnight courier service, addressed (until another address is filed in writing by the Company or the Warrant Agent) as set forth below and if to any holder any notice, statement or demand shall be given to the last address set forth for such holder (if any) in the Warrant Register:

If to the Company, to:

Altamira Therapeutics Ltd.
Clarendon House
2 Church Street
Hamilton HM11
Bermuda
Attention: Thomas Meyer
email: thm@altamiratherapeutics.com

with a copy (which shall not constitute notice) to:

Lowenstein Sandler
1251 Avenue of the America
New York, NY 10020
Attention: Steven Skolnick
email: sskolnick@lowenstein.com

If to the Warrant Agent, to:

American Stock Transfer & Trust Company, LLC

6201 15th Avenue, Brooklyn, NY 11219,
Attention: Reorg Department
Email: reorgwarrants@equiniti.com

With a copy to:

American Stock Transfer & Trust Company, LLC
48 Wall Street, 22nd Floor
New York, NY 10005
Attention: Legal Department
Email: legalteamUS@equiniti.com

8.5. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth above prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth above on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. Notwithstanding any other provision of this Warrant Agreement, where this Warrant Agreement provides for notice of any event to the Holder, if this Warrant Agreement is held in global form by DTC (or any successor depository), such notice shall be sufficiently given if given to DTC (or any successor depository) pursuant to the procedures of DTC (or such successor depository), subject to a Holder's right to elect to receive a Warrant in certificated form pursuant to the terms of this Warrant Agreement, in which case this sentence shall not apply.

8.6. This Warrant Agreement shall be governed by and construed in accordance with the laws of the State of New York. All actions and proceedings relating to or arising from, directly or indirectly, this Warrant Agreement may be litigated in courts located within the Borough of Manhattan in the City and State of New York. The Company hereby submits to the personal jurisdiction of such courts and consents that any service of process may be made by certified or registered mail, return receipt requested, directed to the Company at its address last specified for notices hereunder.

8.7. This Warrant Agreement shall inure to the benefit of and be binding upon the successors and assigns of the parties hereto. This Warrant Agreement may not be assigned, or otherwise transferred, in whole or in part, by either party without the prior written consent of the other party, which the other party will not unreasonably withhold, condition or delay; except that (i) consent is not required for an assignment or delegation of duties by the Warrant Agent to any affiliate of the Warrant Agent and (ii) any reorganization, merger, consolidation, sale of assets or other form of business combination by the Warrant Agent or the Company shall not be deemed to constitute an assignment of this Warrant Agreement.

8.8. No provision of this Warrant Agreement may be amended, modified or waived, except in a written document signed by both parties. The Company and the Warrant Agent may amend or supplement this Warrant Agreement without the consent of any Holder for the purpose of curing any ambiguity, or curing, correcting or supplementing any defective provision contained herein or adding or changing any other provisions with respect to matters or questions arising under this Warrant Agreement as the parties may deem necessary or desirable so long as such amendment or supplement shall not adversely affect the interest of the Holders. All other amendments and supplements shall require the vote or written consent of Holders of at least 50.1% of the then outstanding Warrants; provided that if any such amendment or supplement disproportionately and adversely affects the rights of a Holder compared to other Holders, the prior written consent of such Holder shall also be required.

8.9. The Company will from time to time promptly pay all taxes and charges that may be imposed upon the Company or the Warrant Agent in respect of the issuance or delivery of Warrant Shares upon the exercise of Warrants, but the Company may require the Holders to pay any transfer taxes in respect of the Warrants or such shares. The Warrant Agent may refrain from registering any transfer of Warrants or any delivery of any Warrant Shares unless or until the Persons requesting the registration or issuance shall have paid to the Warrant Agent for the account of the Company the amount of such tax or charge, if any, or shall have established to the reasonable satisfaction of the Company and the Warrant Agent that such tax or charge, if any, has been paid.

8.10. Nothing in this Warrant Agreement expressed and nothing that may be implied from any of the provisions hereof is intended, or shall be construed, to confer upon, or give to, any Person other than the parties hereto and the Holders any right, remedy, or claim under or by reason of this Warrant Agreement or of any covenant, condition, stipulation, promise, or agreement hereof.

8.11. A copy of this Warrant Agreement shall be available at all reasonable times at the office of the Warrant Agent designated for such purpose for inspection by any Holder. Prior to such inspection, the Warrant Agent may require any such holder to provide reasonable evidence of its interest in the Warrants.

8.12. This Warrant Agreement may be executed in any number of original, facsimile or electronic counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument.

8.13. The Section headings herein are for convenience only and are not part of this Warrant Agreement and shall not affect the interpretation thereof.

8.14. If a Warrant is held in global form through DTC (or any successor depository), such Warrant is issued subject to this Warrant Agent Agreement. To the extent any provision of a Warrant conflicts with the express provisions of this Warrant Agent Agreement, the provisions of such Warrant shall govern and be controlling.

9. Certain Definitions. As used herein, the following terms shall have the following meanings:

“Adjustment Right” means any right granted with respect to any securities issued in connection with, or with respect to, any issuance, sale or delivery (or deemed issuance, sale or delivery in accordance with Section 4) of Common Stock (other than rights of the type described in Section 4.2 and 4.3 hereof) that could result in a decrease in the net consideration received by the Company in connection with, or with respect to, such securities (including, without limitation, any cash settlement rights, cash adjustment or other similar rights) but excluding anti-dilution and other similar rights.

“Affiliate” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

“Bid Price” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holders of a majority of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

“Business Day” means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Trading Day” means any day on which the Common Stock is traded on the Trading Market, or, if the Trading Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market in the United States on which the Common Stock is then traded, provided that “Trading Day” shall not include any day on which the Common Stock is scheduled to trade on such exchange or market for less than 4.5 hours or any day that the Common Stock is suspended from trading during the final hour of trading on such exchange or market (or if such exchange or market does not designate in advance the closing time of trading on such exchange or market, then during the hour ending at 4:00 P.M., New York City time).

“Trading Market” means the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market or the New York Stock Exchange (or any successors to any of the foregoing).

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported in the “Pink Open Market” published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, this Warrant Agent Agreement has been duly executed by the parties hereto as of the day and year first above written.

ALTAMIRA THERAPEUTICS LTD.

By: _____
Name: _____
Title: _____

AMERICAN STOCK TRANSFER & TRUST COMPANY,
LLC

By: _____
Name: _____
Title: _____

- Annex A Form of Global Certificate
 - Annex B Notice of Exercise
 - Annex C Form of Certificated Warrant
 - Annex D Authorized Representatives
 - Annex E Form of Warrant Certificate Request Notice
-

[FORM OF GLOBAL CERTIFICATE]

UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITORY TRUST COMPANY, A NEW YORK CORPORATION ("DTC"), TO ALTAMIRA THERAPEUTICS LTD. OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE, OR PAYMENT, AND ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.

ALTAMIRA THERAPEUTICS LTD.
WARRANT CERTIFICATE
NOT EXERCISABLE AFTER _____, 2028

This certifies that the person whose name and address appears below, or registered assigns, is the registered owner of the number of Warrants set forth below. Each Warrant entitles its registered holder to purchase from Altamira Therapeutics Ltd., an exempted company limited by shares incorporated in Bermuda (the "Company"), at any time prior to 5:00 P.M. (New York City time) on _____, 2028, one common share, par value CHF 0.20 per share, of the Company (each, a "Warrant Share" and collectively, the "Warrant Shares"), at an exercise price of \$___ per share, subject to possible adjustments as provided in the Warrant Agreement (as defined below), and being at least the par value of such shares.

This Warrant Certificate, with or without other Warrant Certificates, upon surrender at the designated office of the Warrant Agent, may be exchanged for another Warrant Certificate or Warrant Certificates evidencing the same number of Warrants as the Warrant Certificate or Warrant Certificates surrendered. A transfer of the Warrants evidenced hereby may be registered upon surrender of this Warrant Certificate at the designated office of the Warrant Agent by the registered holder in person or by a duly authorized attorney, properly endorsed or accompanied by proper instruments of transfer, a signature guarantee, and such other and further documentation as the Warrant Agent may reasonably request and duly stamped as may be required by the laws of the State of New York and of the United States of America.

The terms and conditions of the Warrants and the rights and obligations of the holder of this Warrant Certificate are set forth in the Warrant Agent Agreement dated as of _____, 2023 (the "Warrant Agreement") between the Company and American Stock Transfer & Trust Company, LLC (the "Warrant Agent"). A copy of the Warrant Agreement is available for inspection during business hours at the office of the Warrant Agent.

This Warrant Certificate shall not be valid or obligatory for any purpose until it shall have been countersigned by an authorized signatory of the Warrant Agent.

WITNESS the facsimile signature of a proper officer of the Company.

ALTAMIRA THERAPEUTICS LTD.

By: _____
Name:
Title:

Dated: _____

Countersigned:

AMERICAN STOCK TRANSFER & TRUST COMPANY, LLC,
As Warrant Agent

By: _____
Name:
Title:

PLEASE DETACH HERE

Certificate No.: _____ Number of Warrants: _____

WARRANT CUSIP NO.: _____

ALTAMIRA THERAPEUTICS LTD.

[Name & Address of Holder]

_____, Warrant Agent

By Mail: _____

By hand or overnight courier: _____

NOTICE OF EXERCISE

TO: ALTAMIRA THERAPEUTICS LTD.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant Certificate (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

in lawful money of the United States; or

if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in Section 3.3.6(b) of the Warrant Agreement (as defined in the Warrant Certificate), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in Section 3.3.6(b) of the Warrant Agreement.

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

The Warrant Shares shall be delivered to the following DWAC Account Number:

Name of Holder: _____

Signature of Authorized Signatory of Holder: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

[FORM OF CERTIFICATED WARRANT]**COMMON STOCK PURCHASE WARRANT****ALTAMIRA THERAPEUTICS LTD.**

Warrant Shares: _____

Initial Exercise Date: _____, 2023

Issue Date: _____, 2023

CUSIP: _____

ISIN: _____

THIS COMMON STOCK PURCHASE WARRANT (the "Warrant") certifies that, for value received, _____ or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after _____, 2023 (the "Initial Exercise Date") and on or prior to the 5:00 P.M., New York City time on _____, 2028 (the "Termination Date") but not thereafter, to subscribe for and purchase from Altamira Therapeutics Ltd., an exempted company limited by shares incorporated in Bermuda (the "Company"), up to _____ common shares (as subject to adjustment hereunder, the "Warrant Shares"). The purchase price of one common share of the Company under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b). This Warrant shall initially be issued and maintained in the form of a security held in book-entry form and The Depository Trust Company or its nominee ("DTC") shall initially be the sole registered holder of this Warrant, subject to a Holder's right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

Section 1. Definitions. In addition to the terms defined elsewhere in this Warrant, the following terms have the meanings indicated in this Section 1:

"Affiliate" means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

"Bid Price" means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the bid price of the Common Stock for the time in question (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on The Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Holders of a majority of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

"Business Day" means any day except any Saturday, any Sunday, any day which is a federal legal holiday in the United States or any day on which banking institutions in the State of New York are authorized or required by law or other governmental action to close.

"Commission" means the United States Securities and Exchange Commission.

"Common Stock" means the common shares of the Company, par value CHF 0.20 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

"Common Stock Equivalents" means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock

“Exchange Act” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“Person” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“Proceeding” means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“Registration Statement” means the Company’s registration statement on Form F-1 (File No. 333-269823).

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Trading Day” means a day on which the Common Stock is traded on a Trading Market.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, or the New York Stock Exchange (or any successors to any of the foregoing).

“Transfer Agent” means American Stock Transfer & Trust Company, LLC, with a mailing address of 6201 15th Avenue, Brooklyn, NY 11219, and any successor transfer agent of the Company.

“Warrant Agent Agreement” means that certain Warrant Agent Agreement, dated as of the Initial Exercise Date, between the Company and the Warrant Agent.

“Warrant Agent” means the Transfer Agent and any successor warrant agent of the Company.

“Warrants” means this Warrant and other Common Stock Purchase Warrants issued by the Company pursuant to the Registration Statement.

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported in the “Pink Open Market” published by OTC Markets Group, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

Section 2. Exercise of Warrant.

(a) Exercise and Payment. Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times during the period commencing on the Initial Exercise Date and terminating at 5:00 P.M., New York City time on the Termination Date (“Exercise Period”) by delivery to the Company of a duly executed facsimile copy (or e-mail attachment) of the Notice of Exercise in the form annexed hereto (the “Notice of Exercise”). Within the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined below) following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier’s check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is specified in the applicable Notice of Exercise. No ink-original Notice of Exercise shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Exercise form be required. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof.** Notwithstanding the foregoing in this Section 2(a), a holder whose interest in this Warrant is a beneficial interest in certificate(s) representing this Warrant held in book-entry form through DTC (or another established clearing corporation performing similar functions), shall effect exercises made pursuant to this Section 2(a) by delivering to DTC (or such other clearing corporation, as applicable) the appropriate instruction form for exercise, complying with the procedures to effect exercise that are required by DTC (or such other clearing corporation, as applicable), subject to a Holder’s right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

(b) Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be \$_____, subject to adjustment hereunder, and being at least the par value of such share (the “Exercise Price”).

(c) Cashless Exercise. If at the time of exercise hereof there is no effective registration statement registering, or the prospectus contained therein is not available for the issuance of the Warrant Shares to the Holder, then this Warrant may also be exercised, in whole or in part, at such time by means of a “cashless exercise” in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained (if such quotient would be a positive number) by dividing [(A-B) (X)] by (A), where:

- (A) = as applicable: (i) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise if such Notice of Exercise is (1) both executed and delivered pursuant to Section 2(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 2(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the VWAP on the Trading Day immediately preceding the date of the applicable Notice of Exercise or (z) the Bid Price of the Common Stock on the principal Trading Market as reported by Bloomberg L.P. as of the time of the Holder’s execution of the applicable Notice of Exercise if such Notice of Exercise is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 2(a) hereof or (iii) the VWAP on the date of the applicable Notice of Exercise if the date of such Notice of Exercise is a Trading Day and such Notice of Exercise is both executed and delivered pursuant to Section 2(a) hereof after the close of “regular trading hours” on such Trading Day;
- (B) = the Exercise Price of this Warrant, as adjusted hereunder; and
- (X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

Notwithstanding anything herein to the contrary, but without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise” pursuant to this Section 2(c) or to receive cash payments pursuant to Section 3(d)(i) and Section 3(d)(iv) herein, the Company shall not be required to make any cash payments or net cash settlement to the Holder in lieu of delivery of the Warrant Shares. If Warrant Shares are issued in such a cashless exercise, the parties acknowledge and agree that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised. The Company agrees not to take any position contrary to this Section 2(c).

Notwithstanding anything herein to the contrary, on the Termination Date, this Warrant shall be automatically exercised via cashless exercise pursuant to this Section 2(c).

(d) Mechanics of Exercise.

(i) Delivery of Warrant Shares Upon Exercise. The Company shall cause the Warrant Shares purchased hereunder to be transmitted by the Transfer Agent to the Holder by crediting the account of the Holder’s or its designee’s balance account with DTC through its Deposit or Withdrawal at Custodian system (“DWAC”) if the Company is then a participant in such system and either (A) there is an effective registration statement permitting the issuance of the Warrant Shares to or resale of the Warrant Shares by Holder or (B) this Warrant is being exercised via cashless exercise, and otherwise by physical delivery of a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the address specified by the Holder in the Notice of Exercise by the date that is earlier of (i) two (2) Trading Days after the delivery to the Company of the Notice of Exercise and (ii) the number of Trading Days comprising the Standard Settlement Period after the delivery to the Company of the Notice of Exercise (such date, the “Warrant Share Delivery Date”). Upon delivery of the Notice of Exercise, the Holder shall be deemed for all corporate purposes to have become the holder of record of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date of delivery of the Warrant Shares, provided that payment of the aggregate Exercise Price (other than in the case of a cashless exercise) is received the earlier of (i) two (2) Trading Days of and (ii) the number of Trading Days comprising the Standard Settlement Period following the delivery of the Notice of Exercise. If the Company fails for any reason to deliver to the Holder the Warrant Shares subject to a Notice of Exercise by the Warrant Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the VWAP of the Common Stock on the date of the applicable Notice of Exercise), \$10 per Trading Day (increasing to \$20 per Trading Day on the fifth Trading Day after such liquidated damages begin to accrue) for each Trading Day after such Warrant Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise. The Company agrees to maintain a transfer agent that is a participant in the FAST program so long as this Warrant remains outstanding and exercisable. As used herein, “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Exercise

(ii) Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

(iii) Rescission Rights. If the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

(iv) Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Transfer Agent to transmit to the Holder the Warrant Shares in accordance with the provisions of Section 2(d)(i) above pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

(v) No Fractional Shares or Scrip. No fractional Warrant Shares will be issued upon the exercise of this Warrant. If a Holder would be entitled, upon the exercise of this Warrant, to receive a fractional interest in a share, the Company shall, upon such exercise, round up or down, as applicable, to the nearest whole number the number of Warrant Shares to be issued to such Holder.

(vi) Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Exercise and all fees to the DTC (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Warrant Shares.

(vii) Closing of Books. The Company will not close its shareholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

(e) Holder's Exercise Limitations. The Company shall not effect any exercise of this Warrant, and a Holder shall not have the right to exercise any portion of this Warrant, pursuant to Section 2 or otherwise, to the extent that after giving effect to such issuance after exercise as set forth on the applicable Notice of Exercise, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties")), would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) exercise of the remaining, non-exercised portion of this Warrant beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or non-converted portion of any other securities of the Company (including, without limitation, any other Common Stock Equivalents) subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 2(e), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder, it being acknowledged by the Holder that the Company is not representing to the Holder that such calculation is in compliance with Section 13(d) of the Exchange Act and the Holder is solely responsible for any schedules required to be filed in accordance therewith. To the extent that the limitation contained in this Section 2(e) applies, the determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable shall be in the sole discretion of the Holder, and the submission of a Notice of Exercise shall be deemed to be the Holder's determination of whether this Warrant is exercisable (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which portion of this Warrant is exercisable, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 2(e), in determining the number of outstanding shares of Common Stock, a Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company or (C) a more recent written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written or oral request of a Holder, the Company shall within two (2) Trading Days confirm orally and in writing to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder or its Affiliates or Attribution Parties since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon exercise of this Warrant. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 2(e), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon exercise of this Warrant held by the Holder and the provisions of this Section 2(e) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 2(e) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation herein contained or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Warrant.

Section 3. Certain Adjustments.

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend (bonus issue) or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (consolidates) (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of share capital of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock and such other share capital of the Company (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock such other share capital of the Company (excluding treasury shares, if any) outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of shareholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination (consolidation) or re-classification.

(b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

(c) Dividends. If the Company, at any time during the Exercise Period, shall pay a dividend in cash, securities or other assets to all holders of Common Stock (or other shares of the Company's capital stock into which the Warrants are convertible), other than a transaction described in Section 3(a), Section 3(b) or Section 3(d) (any such non-excluded event being referred to herein as a "Dividend"), then the Exercise Price shall be decreased, effective immediately after the effective date of such Dividend, by the quotient of (i) the gross amount of cash and/or fair market value (as determined by the Company's Board of Directors, in good faith) of all securities or other assets paid to the holders of Common Stock (or other shares of the Company's share capital into which the Warrants are convertible) in respect of such Dividend divided by (ii) the sum of the number of shares of Common Stock (or other shares of the Company's share capital into which the Warrants are convertible) outstanding at the time of the Dividend plus the number of shares of Common Stock then issuable upon exercise of all outstanding Warrants, provided, that the Exercise Price shall not be reduced below the par value of a share.

(d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which all holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which all outstanding shares of Common Stock are effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder (without regard to any limitation in Section 2(e) on the exercise of this Warrant), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to any limitation in Section 2(e) on the exercise of this Warrant). For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity (as defined below) shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, if the Fundamental Transaction is not within the Company’s control, including not approved by the Company’s Board of Directors, the Holder shall only be entitled to receive from the Company or any Successor Entity, as of the date of consummation of such Fundamental Transaction, the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock of the Successor Entity (which Successor Entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction. “Black Scholes Value” means the value of this Warrant based on the Black and Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“Bloomberg”) determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg as of the Trading Day immediately following the public announcement of the applicable contemplated Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the greater of (x) the last VWAP immediately prior to the public announcement of such contemplated Fundamental Transaction and (y) the last VWAP immediately prior to the consummation of such Fundamental Transaction and (D) a remaining option time equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Termination Date. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds within five Business Days of the Holder’s election (or, if later, on the effective date of the Fundamental Transaction). The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 3(d) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of the Warrants referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under the Warrants with the same effect as if such Successor Entity had been named as the Company herein.

(e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

(f) Notice to Holder.

(i) Adjustment to Exercise Price. Whenever the Exercise Price is adjusted pursuant to any provision of this Section 3, the Company shall promptly deliver to the Holder by facsimile or email a notice setting forth the Exercise Price after such adjustment and any resulting adjustment to the number of Warrant Shares and setting forth a brief statement of the facts requiring such adjustment.

(ii) Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of share capital of any class or of any rights, (D) the approval of any shareholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be delivered by facsimile or email to the Holder at its last facsimile number or email address as it shall appear upon the Warrant Register (as defined below), at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided in this Warrant constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. Provided such notice occurs within the Exercise Period, the Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

(a) Transferability. This Warrant and all rights hereunder are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company unless the Holder has assigned this Warrant in full, in which case, the Holder shall surrender this Warrant to the Company within three (3) Trading Days of the date the Holder delivers an assignment form to the Company assigning this Warrant full. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

(b) New Warrants. If this Warrant is not held in global form through DTC (or any successor depository), this Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the original Issuance Date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

(c) Warrant Register. The Warrant Agent (or, in the event a Holder elects to receive a Definitive Certificate (as defined in the Warrant Agent Agreement), the Company) shall register this Warrant, upon records to be maintained by the Warrant Agent (or, in the event a Holder elects to receive a Definitive Certificate, the Company) for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Company and the Warrant Agent may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

Section 5. Miscellaneous.

(a) No Rights as Stockholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a shareholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i), except as expressly set forth in Section 3.

(b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any share certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or share certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or share certificate.

(c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then, such action may be taken or such right may be exercised on the next succeeding Trading Day.

(d) Authorized Shares.

(i) The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of issuing the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and non-assessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

(ii) Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (A) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (B) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable Warrant Shares upon the exercise of this Warrant and (C) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

(iii) Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

(e) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Warrant shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflict of laws thereof. Each party agrees that all legal Proceedings concerning the interpretation, enforcement and defense of this Warrant shall be commenced in the state and federal courts sitting in the City of New York, Borough of Manhattan (the "New York Courts"). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any provision hereunder), and hereby irrevocably waives, and agrees not to assert in any suit, action or Proceeding, any claim that it is not personally subject to the jurisdiction of such New York Courts, or such New York Courts are improper or inconvenient venue for such Proceeding. If any party shall commence an action or Proceeding to enforce any provisions of this Warrant, then the prevailing party in such action or Proceeding shall be reimbursed by the other party for its attorneys' fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or Proceeding.

(f) Restrictions. The Holder acknowledges that the Warrant Shares acquired upon the exercise of this Warrant, if not registered, and the Holder does not utilize cashless exercise, will have restrictions upon resale imposed by state and federal securities laws.

(g) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate Proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

(h) Notices. Any and all notices or other communications or deliveries to be provided by the Holders hereunder including, without limitation, any Notice of Exercise, shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service, addressed to the Company, at Clarendon House, 2 Church Street, Hamilton, HM11, Bermuda, Attention: Thomas Meyer, CEO, email address: [], or such other email address or address as the Company may specify for such purposes by notice to the Holders. Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by e-mail, or sent by a nationally recognized overnight courier service addressed to each Holder at the e-mail address or address of such Holder appearing on the books of the Warrant Agent. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the time of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via e-mail at the e-mail address set forth in this Section on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service, or (iv) upon actual receipt by the party to whom such notice is required to be given. Notwithstanding any other provision of this Warrant, where this Warrant provides for notice of any event to the Holder, if this Warrant is held in global form by DTC (or any successor depository), such notice shall be sufficiently given if given to DTC (or any successor depository) pursuant to the procedures of DTC (or such successor depository), subject to a Holder's right to elect to receive a Warrant in certificated form pursuant to the terms of the Warrant Agent Agreement, in which case this sentence shall not apply.

(i) Warrant Agent Agreement. If this Warrant is held in global form through DTC (or any successor depository), this Warrant is issued subject to the Warrant Agent Agreement. To the extent any provision of this Warrant conflicts with the express provisions of the Warrant Agent Agreement, the provisions of this Warrant shall govern and be controlling.

(j) Limitation of Liability. No provision hereof, in the absence of any affirmative action by the Holder to exercise this Warrant to purchase Warrant Shares, and no enumeration herein of the rights or privileges of the Holder, shall give rise to any liability of the Holder for the purchase price of any Common Stock or as a shareholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

(k) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

(l) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

9.1. Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company, on the one hand, and either: (i) the Holder or the beneficial owner of this Warrant, on the other hand, or (ii) the vote or written consent of the Holders of at least 50.1% of the then outstanding Warrants issued pursuant to the Warrant Agent Agreement, on the other hand; provided that if any such modification, amendment or waiver disproportionately and adversely affects the rights of a Holder compared to other Holders, the prior written consent of such Holder shall also be required.

(m) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

(n) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

ALTAMIRA THERAPEUTICS LTD.

By: _____
Name:
Title:

NOTICE OF EXERCISE

TO: ALTAMIRA THERAPEUTICS LTD.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

in lawful money of the United States; or

if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

The Warrant Shares shall be delivered to the following DWAC Account Number:

Name of Holder: _____

Signature of Authorized Signatory of Holder: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____

ASSIGNMENT FORM

(To assign the foregoing Warrant, execute this form and supply required information. Do not use this form to purchase shares.)

FOR VALUE RECEIVED, the foregoing Warrant and all rights evidenced thereby are hereby assigned to

Name: _____
(Please Print)

Address: _____
(Please Print)

Phone Number: _____

Email Address: _____

Dated: _____, _____

Holder's Signature: _____

Holder's Address: _____

AUTHORIZED REPRESENTATIVES

<u>Name</u>	<u>Title</u>	<u>Signature</u>
Thomas Meyer	Chief Executive Officer	
Marcel Gremaud	Chief Financial Officer	

[FORM OF WARRANT CERTIFICATE REQUEST NOTICE]

WARRANT CERTIFICATE REQUEST NOTICE

To: American Stock Transfer & Trust Company, LLC,

as Warrant Agent for Altamira Therapeutics Ltd., an exempted company limited by shares incorporated in Bermuda (the "Company")

The undersigned Holder of Common Stock Purchase Warrants ("Warrants") in the form of Global Warrants issued by the Company hereby elects to receive a Definitive Certificate evidencing the Warrants held by the Holder as specified below:

(1) Name of Holder of Warrants in form of Global Warrants: _____

(2) Name of Holder in Definitive Certificate (if different from name of Holder of Warrants in form of Global Warrants):

(3) Number of Warrants in name of Holder in form of Global Warrants: _____

(4) Number of Warrants for which Definitive Certificate shall be issued: _____

(5) Number of Warrants in name of Holder in form of Global Warrants after issuance: _____

The Definitive Certificate shall be delivered to the following address:

The undersigned hereby acknowledges and agrees that, in connection with this Warrant Exchange and the issuance of the Definitive Certificate, the Holder is deemed to have surrendered the number of Warrants in form of Global Warrants in the name of the Holder equal to the number of Warrants evidenced by the Definitive Certificate.

Name of Holder: _____

Signature of Authorized Signatory of Holder: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Date: _____



CONYERS DILL & PEARMAN LIMITED

Clarendon House, 2 Church Street
Hamilton HM 11, Bermuda

Mail: PO Box HM 666, Hamilton HM CX, Bermuda
T +1 441 295 1422

conyers.com

22 March 2023

Matter No.: 365475
441 299 4938
guy.cooper@conyers.com

Altamira Therapeutics Ltd.
Clarendon House
2 Church Street
Hamilton HM 11
Bermuda

Dear Sir/Madam,

Altamira Therapeutics Ltd. (the "Company")

We have acted as special Bermuda legal counsel to the Company in connection with a registration statement on form F1 filed with the U.S. Securities and Exchange Commission (the "**Commission**") on 7 March 2023 (the "**Registration Statement**", which term does not include any other document or agreement whether or not specifically referred to therein or attached as an exhibit or schedule thereto) relating to the registration under the U.S. Securities Act of 1933, as amended, (the "**Securities Act**") of (i) up to US\$8,000,000 of common shares, par value CHF 0.20 each of the Company ("**Common Shares**"), together with up to an additional US\$1,200,000 of Common Shares subject to an over-allotment option granted to the underwriters by the Company (the "**Offer Shares**"); (ii) pre-funded warrants to purchase up to US\$8,000,000 of Common Shares, together with additional prefunded warrants to purchase up to US\$1,200,000 of Common Shares subject to an over-allotment option granted to the underwriters by the Company (the "**Pre-Funded Warrants**"); (iii) common warrants to purchase up to US\$9,600,000 of Common Shares, together with additional common warrants to purchase up to US\$1,440,000 Common Shares subject to an over-allotment option granted to the underwriters by the Company (the "**Common Warrants**" and together with the Pre-Funded Warrants, the "**Warrants**"); and (iv) the Common Shares to be issued upon exercise of the Warrants (the "**Warrant Shares**" and together with the Offer Shares, the "**Shares**" and the Shares together with the Warrants, the "**Securities**").

1. DOCUMENTS REVIEWED

For the purposes of giving this opinion, we have examined a copy of the Registration Statement. We have also reviewed:

- 1.1. the form of the Pre-Funded Warrants;
 - 1.2. the form of the common stock purchase warrant for the Common Warrants (the "**Common Stock Purchase Warrant**");
-

- 1.3. copies of the memorandum of association and the bye-laws of the Company, each certified by the Secretary of the Company on 22 March 2023 (the "**Constitutional Documents**");
- 1.4. copies of written resolutions of its directors dated 15 February 2023, 7 March 2023, 12 March 2023 and 22 March 2023 (the "**Resolutions**"); and
- 1.5. such other documents and made such enquiries as to questions of law as we have deemed necessary in order to render the opinion set forth below.

2. **ASSUMPTIONS**

We have assumed:

- 2.1. the genuineness and authenticity of all signatures and the conformity to the originals of all copies (whether or not certified) examined by us and the authenticity and completeness of the originals from which such copies were taken;
- 2.2. that where a document has been examined by us in draft form, it will be or has been executed and/or filed in the form of that draft, and where a number of drafts of a document have been examined by us all changes thereto have been marked or otherwise drawn to our attention;
- 2.3. the capacity, power and authority of each of the parties to the Warrants, other than the Company, to enter into and perform its respective obligations under the Warrants;
- 2.4. the due execution and physical delivery thereof of the Warrants by each of the parties thereto including the Company with an intention to be bound thereby;
- 2.5. the legality, validity and binding effect under the laws of the State of New York (the "**Foreign Laws**") of the Pre-Funded Warrants and the Common Stock Purchase Warrant which are expressed to be governed by the Foreign Laws, in accordance with their respective terms;
- 2.6. the accuracy and completeness of all factual representations made in the Registration Statement, the form of the Pre-Funded Warrants, the Common Stock Purchase Warrant and other documents reviewed by us;
- 2.7. that the Resolutions were passed at one or more duly convened, constituted and quorate meetings, or by unanimous written resolutions, remain in full force and effect and have not been rescinded or amended;
- 2.8. that there is no provision of the law of any jurisdiction, other than Bermuda, which would have any implication in relation to the opinions expressed herein;
- 2.9. that the Constitutional Documents will not be amended in any manner that would affect the opinions expressed herein;
- 2.10. that the Company will have sufficient authorised capital to effect the issuance of any of the Shares at the time of issuance;
- 2.11. that the Company's common shares will be listed on an appointed stock exchange, as defined in the Companies Act 1981, as amended, at the time of issuance of any Shares or Warrants and the consent to the issue and free transfer of the Company's securities given by the Bermuda Monetary Authority as of 27 February 2019 will not have been revoked or amended at the time of issuance of any Shares or Warrants;

- 2.12. that upon issue of any Shares the Company will receive consideration for the full issue price thereof which shall be equal to at least the par value thereof;
- 2.13. that upon issue of any Warrants the Company will receive consideration for the full purchase price thereof; and
- 2.14. the pricing committee of the board of directors of the Company will have approved the terms of the offer and sale of the Shares and Warrants as contemplated by the Registration Statement, including the number of Shares and Warrants and price at which such shares and Warrants are to be sold, as authorised by the board of directors of the Company pursuant to the Resolutions.

3. QUALIFICATIONS

- 3.1. We have made no investigation of and express no opinion in relation to the laws of any jurisdiction other than Bermuda.
- 3.2. This opinion is to be governed by and construed in accordance with the laws of Bermuda and is limited to and is given on the basis of the current law and practice in Bermuda.
- 3.3. This opinion is issued solely for the purposes of the filing of the Registration Statement and the offering of the Securities by the Company and is not to be relied upon in respect of any other matter.

4. OPINION

On the basis of and subject to the foregoing, we are of the opinion that:

- 4.1. The Company is duly incorporated and existing under the laws of Bermuda in good standing (meaning solely that it has not failed to make any filing with any Bermuda governmental authority under the Companies Act 1981, or to pay any Bermuda government fee or tax, which would make it liable to be struck off the Register of Companies and thereby cease to exist under the laws of Bermuda).
- 4.2. When issued and paid for as contemplated by the Registration Statement, the Offer Shares will be validly issued, fully paid and non-assessable (which term means when used herein that no further sums are required to be paid by the holders thereof in connection with the issue of such shares).
- 4.3. When issued and paid for as contemplated by the Registration Statement and the terms of the Pre-Funded Warrants and/or the Common Stock Purchase Warrant, as applicable, the Warrant Shares will be validly issued, fully paid and non-assessable (which term means when used herein that no further sums are required to be paid by the holders thereof in connection with the issue of such shares).

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the prospectus forming a part of the Registration Statement. In giving this consent, we do not hereby admit that we are experts within the meaning of Section 11 of the Securities Act or that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the Rules and Regulations of the Commission promulgated thereunder.

Yours faithfully,

/s/ Conyers Dill & Pearman Limited

Conyers Dill & Pearman Limited

March 22, 2023

Altamira Therapeutics Ltd.
Clarendon House
2 Church Street
Hamilton HM 11
Bermuda
Ladies and Gentlemen:

We have acted as special U.S. counsel to Altamira Therapeutics Ltd., an exempted company incorporated in Bermuda (the “**Company**”) in connection with the sale and issuance of up to \$9,200,000 of the Company’s common shares, par value CHF 0.20 per share (the “**Common Shares**” and such shares, the “**Shares**”), Pre-Funded Warrants (the “**Pre-Funded Warrants**”) to purchase up to \$9,200,000 of Common Shares (the “**Pre-Funded Warrant Shares**”) and Common Warrants (the “**Common Warrants**”) to purchase up to \$11,040,000 of Common Shares (such Common Shares, together with the Pre-Funded Warrant Shares, the “**Warrant Shares**”) pursuant to the Registration Statement on Form F-1 (File No. 333-269823) (the “**Registration Statement**”) filed by the Company with the Securities and Exchange Commission (the “**Commission**”) under the Securities Act of 1933, as amended (the “**Securities Act**”), and the rules and regulations promulgated thereunder, together with the Prospectus contained therein (the “**Prospectus**”). The Shares, Pre-Funded Warrants and Common Warrants are to be sold pursuant to an Underwriting Agreement (the “**Agreement**”) between the Company and ThinkEquity LLC, as the representative (the “**Representative**”) of the several underwriters, if any, named in Schedule I thereto (each an “**Underwriter**” and collectively, the “**Underwriters**”).

As counsel to the Company in connection with the proposed potential issuance and sale of the above-referenced Shares, Pre-Funded Warrants, Common Warrants and Warrant Shares, we have reviewed the Registration Statement, Prospectus and the respective exhibits thereto. We have also reviewed such corporate documents and records of the Company, such certificates of public officials and officers of the Company and such other matters as we have deemed necessary or appropriate for purposes of this opinion. In our examination, we have assumed: (i) the authenticity of original documents and the genuineness of all signatures; (ii) the conformity to the originals of all documents submitted to us as copies; (iii) the truth, accuracy and completeness of the information, representations and warranties contained in the instruments, documents, certificates and records we have reviewed; (iv) that, as set forth in a separate opinion delivered to the Company on the date hereof by Conyers Dill & Pearman Limited, special Bermuda counsel to the Company, the Pre-Funded Warrants and Common Warrants have been duly authorized; and (v) the legal capacity for all purposes relevant hereto of all natural persons and, with respect to all parties to agreements or instruments relevant hereto other than the Company, that such parties had the requisite power and authority (corporate or otherwise) to execute, deliver and perform such agreements or instruments, that such agreements or instruments have been duly authorized by all requisite action (corporate or otherwise), executed and delivered by such parties and that such agreements or instruments are the valid, binding and enforceable obligations of such parties. As to any facts material to the opinions expressed herein that were not independently established or verified, we have relied upon oral or written statements and representations of officers and other representatives of the Company.

Based on the foregoing, and subject to the assumptions, limitations and qualifications set forth herein, we are of the opinion that (i) when the Pre-Funded Warrants are duly executed and delivered by the Company and paid for by the Underwriters pursuant to the Agreement, such Pre-Funded Warrants will constitute the legal, valid and binding obligation of the Company, enforceable against the Company in accordance with their terms, subject to bankruptcy, insolvency or other similar laws affecting creditors’ rights and to general equitable principles; and (ii) when the Common Warrants are duly executed and delivered by the Company and paid for by the Underwriters pursuant to the Agreement, such Common Warrants will constitute the legal, valid and binding obligation of the Company, enforceable against the Company in accordance with their terms, subject to bankruptcy, insolvency or other similar laws affecting creditors’ rights and to general equitable principles.

The opinion set forth above are subject to the following exceptions, limitations and qualifications: (i) the effect of bankruptcy, insolvency, reorganization, fraudulent conveyance, moratorium or other similar laws now or hereafter in effect relating to or affecting the rights and remedies of creditors; (ii) the effect of general principles of equity, including without limitation, concepts of materiality, reasonableness, good faith and fair dealing and the possible unavailability of specific performance or injunctive relief, regardless of whether enforcement is considered in a proceeding in equity or at law, and the discretion of the court before which any proceeding therefor may be brought; and (iii) the unenforceability under certain circumstances under law or court decisions of provisions providing for the indemnification of, or contribution to, a party with respect to liability where such indemnification or contribution is contrary to public policy. We express no opinion concerning the enforceability of any waiver of rights or defenses with respect to stay, extension or usury laws.

Our opinion is limited to the laws of New York. We express no opinion as to the effect of the law of any other jurisdiction. Our opinion is rendered as of the date hereof, and we assume no obligation to advise you of changes in law or fact (or the effect thereof on the opinions expressed herein) that hereafter may come to our attention. We advise you that matters of Bermuda law are covered in the opinion of Conyers Dill & Pearman Limited, special Bermuda counsel for the Company, in Exhibit 5.1 to the Registration Statement.

We hereby consent to the inclusion of this opinion as Exhibit 5.2 to the Registration Statement and to the references to our firm therein and in the Prospectus under the caption "Legal Matters." In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Lowenstein Sandler LLP

Lowenstein Sandler LLP

**Amendment No. 3 to
Convertible Loan Agreement**

March [], 2023

FiveT Investment Management Ltd.
Suite 5B201, 2nd Floor, One Nexus Way
Camana Bay, Grand Cayman KY1-1108
Cayman Islands

Ladies and Gentlemen:

Reference is made to the Convertible Loan Agreement dated February 4, 2022, as amended on January 26, 2023 and March 9, 2023 (the “**Agreement**”), between FiveT Investment Management Ltd. (the “**Lender**”) and Altamira Therapeutics Ltd. (the “**AMTL**”). The parties hereby agree that, effective as of the date hereof, the Agreement shall be amended as follows:

1. Section 14 is amended and restated in its entirety as follows:

In the event of a public or private offering by AMTL of Common Shares, other than through equity line or “at-the-market” programs (a **Qualifying Offering**), AMTL will make a partial repayment of the principal amount of the Loan comprised of (i) USD 1,000,000 in cash and (ii) newly issued Common Shares in an amount equaling 9.9% of the total outstanding Common Shares of AMTL post-issuance and after giving effect to such offering, with such Common Shares being valued for purposes of such repayment at the effective offering price per Common Share in such offering, and with such cash repayment in (i) and offering price in (ii) being converted into Swiss Francs at the midpoint of the interbank exchange rate shown by UBS at 4:00 pm Central European Time on the Business Day immediately preceding the date of pricing or execution of the Qualifying Offering (the **Qualifying Offering Price**), with delivery of such repayment to be no later than two Business Days after the closing of such offering (the “**Repayment Date**”), it being agreed that such Common Shares shall be free of any resale restrictions under the Securities Act. Notwithstanding anything herein to the contrary, and for the avoidance of doubt, to the extent that securities of AMTL other than Common Shares (“**Other Offered Securities**”) are issued and sold in a Qualifying Offering in fixed combinations accompanying the Common Shares sold in such Qualifying Offering, including, for example, as warrant coverage, Lender shall be issued the same such Other Offered Securities along with the Common Shares to be issued in (ii) above in the same proportion of Common Shares and Other Offered Securities as applies to investors purchasing securities in such Qualifying Offering.

In addition, on the Repayment Date, after taking into account the repayment under Section 14(a), AMTL shall have the option to cause the Lender to convert any remaining outstanding principal amount of the Loan and accrued and unpaid Interest into a warrant, substantially in the form attached hereto as Annex 14 (the **Pre-Funded Warrant**), having an exercise price of CHF 0.01 per Common Share, and giving Lender the right to purchase from AMTL a number of Common Shares (the **Warrant Shares**) equal to (A) the total remaining outstanding principal amount of the Loan and accrued and unpaid Interest divided by (B) the Qualifying Offering Price less CHF 0.01, *provided, however*, that AMTL shall only be entitled to cause the Lender to convert an amount of the remaining outstanding principal amount of the Loan and accrued and unpaid Interest into a Pre-Funded Warrant to the extent that at the time of such conversion AMTL has sufficient authorized and unissued Common Shares to be issued upon the exercise thereof. Notwithstanding anything herein to the contrary, and for the avoidance of doubt, to the extent that Other Offered Securities are issued and sold in the related Qualifying Offering in fixed combinations accompanying the Common Shares sold in such Qualifying Offering, including, for example, as warrant coverage, Lender shall also be issued additional Other Offered Securities with respect to each Warrant Share in the same proportion of Common Shares and Other Offered Securities as applies to investors purchasing securities in such Qualifying Offering. Further, for the avoidance of doubt, any outstanding amount under the Loan that is not converted into the Pre-Funded Warrant will be due and payable in cash on the Maturity Date. From the date of issuance of the Pre-Funded Warrant until February 21, 2024, upon the occurrence of each and every out-licensing or divestiture transaction executed by AMTL that results in gross cash proceeds of CHF 1,000,000 or more (a **Qualifying Transaction**), the Lender, by providing written notice (a **Redemption Notice**) within five Business Days after the closing of the Qualifying Transaction, may cause AMTL to redeem for cash all or portions of the Pre-Funded Warrant, represented by the amount of Warrant Shares issuable thereunder, in an amount of up to 40% of the cash proceeds from the Qualifying Transaction, with the amount of the Pre-Funded Warrant being redeemed equal to (A) the desired redemption amount divided by (B) the Qualifying Offering Price less CHF 0.01, with delivery of such redemption amount to be no later than five Business Days after the later of (i) the receipt by AMTL of the applicable Redemption Notice and (ii) the receipt by AMTL of the cash proceeds of the Qualifying Transaction. Upon any such redemption, a proportionate number of Other Offered Securities, if any, held by Lender will also be deemed redeemed together with the applicable portion of the Pre-Funded Warrant. AMTL shall provide immediate written notification to Lender of the signing and closing of any and all Qualifying Transactions.”

Except as expressly set forth herein, the Agreement remains in full force and effect. All of the amendments set forth herein shall be deemed to have been made simultaneously. This amendment shall be governed by, and construed in accordance with the substantive laws of Switzerland (to the exclusion of conflicts of laws principles and provisions). This amendment may be executed in counterparts, and delivery thereof may be made by facsimile or electronic transmission.

[Signature Page Follows.]

If the foregoing correctly sets forth the understanding between us, please so indicate in the space provided below for that purpose.

Very truly yours,

ALTAMIRA THERAPEUTICS LTD.

By: _____
Name: Thomas Meyer
Title: Chairman and CEO

ACCEPTED as of the date first above written:

FIVET INVESTMENT MANAGEMENT LTD.

By: _____
Name:
Title:

[Signature Page to Amendment No. 3 to Convertible Loan Agreement]

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the use in this Registration Statement No. 333-269823 on Form F-1 of our report dated April 12, 2022, relating to the financial statements of Altamira Therapeutics Ltd. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

Deloitte AG

/s/ Roland Mueller
Zurich, Switzerland
March 22, 2023

/s/ Adrian Kaeppli

Calculation of Filing Fee Tables

Form F-1
(Form Type)

Altamira Therapeutics Ltd.
(Exact Name of Registrant as Specified in its Charter)

Not Applicable
(Translation of Registrant's Name into English)

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price(1)(2)	Fee Rate	Amount of Registration Fee(3)
Fees to Be Paid	Equity	Common shares, par value CHF 0.20 per share(5)	Other			\$ 9,200,000	0.0001102	\$ 1,013.84
	Equity	Pre-Funded Warrants(5)	457(g)					(4)
	Equity	Common Shares underlying Pre-Funded Warrants(5)	457(o)			(5)	0.0001102	(5)
	Equity	Common Warrants	457(g)					(4)
	Equity	Common Shares underlying Common Warrants	457(o)			\$ 11,040,000	0.0001102	\$ 1,216.61
		Total Offering Amounts				\$ 20,240,000		\$ 2,230.45
		Total Fees Previously Paid						\$ 1,267.30
		Total Fee Offsets						\$ 1,267.30
		Net Fee Due						<u>\$ 963.15</u>

- (1) Estimated solely for the purpose of computing the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act").
- (2) Includes common shares, if any, which may be issued on exercise of a 45-day option granted to the underwriters to cover over-allotments, if any.
- (3) Calculated pursuant to Rule 457(o) under the Securities, based on an estimate of the proposed maximum aggregate offering price.
- (4) No separate registration fee is payable pursuant to Rule 457(g) under the Securities Act.
- (5) The proposed maximum aggregate offering price of the common shares will be reduced on a dollar-for-dollar basis based on the offering price of any Pre-Funded Warrants issued in the offering, and the proposed maximum aggregate offering price of the Pre-Funded Warrants to be issued in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any common shares issued in the offering. Accordingly, the proposed maximum aggregate offering price of the common shares, Pre-Funded Warrants, if any, and accompanying Common Warrants (including the common shares issuable upon exercise of the Pre-Funded Warrants) is \$9,200,000 (including the underwriters' option to purchase additional common shares and/or Pre-Funded Warrants).