



AETERNA ZENTARIS INC.

FORM POS AM

(Post-Effective Amendment To Registration Statement)

Filed 05/05/23

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As filed with the Securities and Exchange Commission on May 5, 2023

Registration No. 333-248561

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

POST-EFFECTIVE AMENDMENT NO. 4 TO

FORM F-1

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

AETERNA ZENTARIS INC.

(Exact name of Registrant as specified in its charter)

Not Applicable

(Translation of Registrant's name into English)

Canada

(State or other jurisdiction of incorporation
or organization)

2834

(Primary Standard Industrial
Classification Code Number)

Not Applicable

(I.R.S. Employer
Identification Number)

c/o Norton Rose Fulbright Canada, LLP, 222 Bay Street, Suite 3000, PO Box 53, Toronto ON M5K 1E7
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

**Klaus Paulini, PhD
President and Chief Executive Officer
Aeterna Zentaris Inc.**

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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. ☒ [X]

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please 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 term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to

its Accounting Standards Codification after April 5, 2012.

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 or until this registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to Section 8(a) of the Securities Act, may determine.

EXPLANATORY NOTE

Aeterna Zentaris Inc., a corporation incorporated under the laws of Canada (the “Company” or the “Registrant”) filed a registration statement with the Securities and Exchange Commission (the “SEC”) on Form F-1 (Registration number 333-248561) which was declared effective by the SEC on September 14, 2020 (the “Form F-1”).

This Post-Effective Amendment No. 4 is being filed by the Registrant (i) to incorporate by reference into the Form F-1 the Registrant’s Annual Report on Form 20-F for the year ended December 31, 2022 filed with the SEC on March 23, 2023, and (ii) to include certain other information in the Form F-1. This Post-Effective Amendment contains an updated prospectus relating to the offer and sale of the Registrant’s common shares issuable upon exercise of warrants.

All filing fees payable in connection with the registration of the securities registered by the Form F-1 were paid by the Registrant at the time of the initial filing of the Form F-1.

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.

SUBJECT TO COMPLETION, DATED MAY 5, 2023

PRELIMINARY PROSPECTUS

69,241 Common Shares Issuable upon Exercise of Warrants



Aeterna Zentaris Inc.

This prospectus relates to the disposition from time to time of up to 69,241 common shares, no par value per share (“Common Shares”), of Aeterna Zentaris Inc. (“Aeterna Zentaris”, “we”, “us” or the “Company”). These Common Shares may be acquired, or have been acquired, upon exercise of outstanding unregistered warrants previously issued by us in August 2020 which entitle the holders to purchase our Common Shares, at an exercise price of \$11.75 per share, and which are currently exercisable until February 5, 2026. See “Selling Shareholders”. We are not selling any Common Shares under this prospectus and will not receive any of the proceeds from the sale of Common Shares by the selling shareholders. We will, however, receive the net proceeds of any warrants exercised for cash.

We will bear all of the expenses incurred in connection with the registration of these shares. The selling shareholders will pay any underwriting discounts and selling commissions and/or similar charges incurred in connection with the sale of the shares. See “Plan of Distribution.”

The selling shareholders (including their pledgees, donees, transferees, assignees or other successors-in-interest) may offer the Common Shares from time to time through public or private transactions at prevailing market prices or at privately negotiated prices.

Each Common Share (including Common Shares underlying the Common Warrants) offered under this prospectus has associated with it one right to purchase a Common Share under our Rights Plan (as defined herein).

Our Common Shares are listed on both the NASDAQ Capital Market (“NASDAQ”) and on the Toronto Stock Exchange (“TSX”) under the symbol “AEZS”. On May 4, 2023, the last reported sales price of our Common Shares on NASDAQ was \$2.99 per share and on TSX was C\$3.85 per share.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS

APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ACCURACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

Investing in our securities involves a high degree of risk. Before making any decision to invest in our securities, you should carefully consider the information disclosed under “Risk Factors” beginning on page 4 of this Prospectus, as well as those risk factors contained or incorporated by reference into this Prospectus.

The securities offered by this prospectus have not been qualified in Canada and may not be offered or sold in Canada except pursuant to a Canadian prospectus or an exemption from the prospectus requirements under applicable Canadian securities laws. The Company has not filed and does not intend to file a Canadian prospectus in connection with the securities offered by this prospectus.

The date of this Prospectus is May 5, 2023

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form F-1 that we filed with the SEC under the Securities Act of 1933, as amended, or the Securities Act. This prospectus does not contain all of the information included in the registration statement. For further information, we refer you to the registration statement, including its exhibits, filed with the SEC. Statements contained in this prospectus about the contents of any document are not necessarily complete. If SEC rules require that a document be filed as an exhibit to the registration statement, please see such document for a complete description of these matters. You should carefully read this prospectus, together with the additional information described under the headings “Where You Can Find More Information” and “Incorporation of Certain Documents by Reference.”

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information contained in this prospectus and the documents incorporated by reference herein is accurate only as of their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates. If any statement in this prospectus is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference into this prospectus—the statement in the document having the later date modifies or supersedes the earlier statement.

The financial statements included in or incorporated by reference into this prospectus have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board. This may not be comparable to financial statements of United States (“U.S.”) companies, which use U.S. generally accepted accounting principles (“U.S. GAAP”). Our consolidated financial statements are subject to the standards of the Public Company Accounting Oversight Board (United States) and the SEC independence standards.

Unless otherwise stated, currency amounts in this prospectus are stated in United States dollars, or “\$” or “US\$”.

In this prospectus, unless otherwise indicated, references to “we”, “us”, “our”, “Aeterna Zentaris” or the “Company” are to Aeterna Zentaris Inc., a Canadian corporation, and its consolidated subsidiaries, unless it is clear that such terms refer only to Aeterna Zentaris Inc. excluding its subsidiaries. References to “selling shareholders” refer to those shareholders listed herein under “Selling Shareholders,” and their transferees.

PROSPECTUS SUMMARY

This summary highlights selected information about us, this offering and information contained in greater detail elsewhere in this

prospectus and in the documents incorporated by reference herein. This summary is not complete and does not contain all of the information that you should consider before investing in our securities. You should carefully read and consider this entire prospectus and the documents, including financial statements and related notes, and information incorporated by reference into this prospectus, including the financial statements and “Risk Factors” in this prospectus, before making an investment decision. If you invest in our securities, you are assuming a high degree of risk.

Our Company

Aeterna Zentaris (the “Company” or “Aeterna”) is a specialty biopharmaceutical company commercializing and developing therapeutics and diagnostic tests. The Company’s lead product, Macrilen[®] (macimorelin), is the first and only U.S. Food and Drug Administration (“FDA”) and European Medicines Agency-approved oral test indicated for the diagnosis of patients with adult growth hormone deficiency (“AGHD”). Macrilen[®] is currently marketed in the US through a license agreement (the “Novo Amendment”) between the Company and Novo Nordisk Health Care AG (“Novo”) until May 23, 2023 and in the United Kingdom and Europe through a license agreement with Atnahs Pharma UK Limited (“Pharmanovia”) under the trade name of Ghryvelin[™]. The Company is also dedicated to the development of therapeutic assets and has taken steps to establish a pre-clinical pipeline to potentially address unmet medical needs across several indications with a focus on rare or orphan indications.

Corporate Information

We were incorporated on September 12, 1990 under the Canada Business Corporations Act (the “CBCA”) and continue to be governed by the CBCA. Our registered address is located at 222 Bay Street, Suite 3000, P.O. Box 53, Toronto ON M5K 1E7 Canada c/o Norton Rose Fulbright Canada LLP. Our principal executive offices are located at c/o Norton Rose Fulbright Canada, LLP, 222 Bay Street, Suite 3000, PO Box 53, Toronto ON M5K 1E7; our telephone number is (843) 900-3223 and our website is www.zentaris.com. None of the documents or information found on our website shall be deemed to be included in or incorporated by reference into this prospectus, unless such document is specifically incorporated herein by reference. The SEC also maintains a website at www.sec.gov that contains reports, proxy statements and other information regarding registrants that file electronically with the SEC.

We currently have three wholly owned direct and indirect subsidiaries, Aeterna Zentaris GmbH (“AEZS Germany”), based in Frankfurt am Main, Germany, Zentaris IVF GmbH, a direct wholly owned subsidiary of AEZS Germany, based in Frankfurt am Main, Germany, and Aeterna Zentaris, Inc., an entity incorporated in the State of Delaware with an office based in Summerville, South Carolina in the U.S.

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,” our consolidated financial statements and the documents incorporated herein.

Issuer	Aeterna Zentaris Inc.
Securities offered	69,241 of our Common Shares, no par value. Each Common Share offered under this prospectus has associated with it one right to purchase a Common Share under our Rights Plan (as defined herein).
Use of proceeds	We will not receive any of the proceeds from the sale or other disposition of our Common Shares by the selling shareholders.
Risk factors	An investment in our Common Shares involves a high degree of risk. Please refer to “Risk Factors” in this prospectus and in our Annual Report on Form 20-F for the year ended December 31, 2022 filed with the SEC on March 23, 2023, incorporated by reference herein, and other information included or incorporated by reference in this prospectus for a discussion of factors you should carefully consider before investing in our Common Shares.
Nasdaq Capital Market and TSX symbol	“AEZS.”

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described in this prospectus and in any of our filings with the SEC, including the item captioned “Risk Factors” in our most recent Annual Report on Form 20-F and subsequent consolidated financial statements and corresponding management’s discussion and analysis filed with the Canadian securities regulatory authorities and our Reports on Form 6-K furnished to the SEC including our unaudited interim consolidated financial statements and corresponding management’s discussion and analysis. For additional information, please see the sources described in “Where You Can Find More Information.”

These risks are not the only risks we face. Additional risks not presently known to us, or that we currently view as immaterial,

may also impair our business, if any of the risks described in our SEC filings or any additional risks actually occur, our business, financial condition, results of operations and cash flows could be materially and adversely affected. In that case, the value of our securities could decline substantially and you could lose all or part of your investment.

SPECIAL NOTE ON FORWARD-LOOKING STATEMENTS

This Prospectus and the documents incorporated herein by reference contain forward-looking statements made pursuant to the safe-harbor provision of the U.S. Securities Litigation Reform Act of 1995, which reflect our current expectations regarding future events. Forward-looking statements may include, but are not limited to statements preceded by, followed by, or that include the words “will,” “expects,” “believes,” “intends,” “would,” “could,” “may,” “anticipates,” and similar terms that relate to future events, performance, or our results. Forward-looking statements involve known risks and uncertainties, including those discussed the item captioned “Risk Factors” in our most recent Annual Report on Form 20-F. Known and unknown risks and uncertainties could cause our actual results to differ materially from those in forward-looking statements. Such risks include but are not limited to:

- the delisting of our Common Shares from the NASDAQ or the TSX could impact their market price and liquidity;
- we may be a passive foreign investment company, which could result in adverse tax consequences;
- our net operating losses may be limited under U.S. tax laws;
- our Rights Plan may prevent changes of control of the Company;
- the economic effects of COVID-19 may impact the market price of our Common Shares;
- investments in biopharmaceutical companies are generally considered to be speculative;
- risks relating to the failure to commercialize or out-license Macrilen™ (macimorelin);
- our revenues and expenses may fluctuate significantly and we may fail to meet financial expectations;
- the failure to complete the clinical trial program for the pediatric indication of Macrilen™ (macimorelin) could impact our operations;
- our dependence on strategic third party relationships regarding Macrilen™ (macimorelin);
- we may be unsuccessful in completing further out-licensing arrangement for Macrilen™ (macimorelin);
- we have initiated significant early-stage pre-clinical programs;
- we may require significant additional financing, and we may not have access to sufficient capital;
- we are and will be subject to ongoing government regulation for our products;
- marketing approval for Macrilen™ (macimorelin) could be subject to restrictions or withdrawals;
- healthcare reforms could hinder the commercial success of a product and affect our business;
- we may be subject to civil or criminal penalties if we interact with healthcare practitioners in a way that violates healthcare fraud or abuse laws;
- we may be unable to generate significant revenues if Macrilen™ (macimorelin) does not gain market acceptance;
- we may expend our limited resources to pursue a particular product or indication and fail to capitalize on other products or indications for which there may be a greater likelihood of success;
- we may not achieve our projected development goals in the time-frames we announce and expect;
- if we fail to obtain acceptable prices or adequate reimbursement for Macrilen™ (macimorelin), our ability to generate revenues will be diminished;
- competition in our targeted markets is intense, and development by other companies could render Macrilen™ (macimorelin), or any of our future products, non-competitive;
- we may not obtain adequate protection for Macrilen™ (macimorelin) through our intellectual property;
- we may infringe the intellectual property rights of others;
- patent litigation is costly and time consuming and may subject us to liabilities;

- we may not obtain trademark registrations for our current or future products;
- we rely on third parties to conduct, supervise and monitor our clinical trials, and those third parties may not perform satisfactorily;
- any difficulties or delays in our clinical trials could result in increased costs to us, delay or limit our ability to generate revenue and adversely affect our commercial prospects;
- the FDA and other foreign equivalents may not accept data from clinical trials outside the United States, in which case our development plans will be delayed, which could materially harm our business;
- in carrying out our operations, we are dependent on a stable and consistent supply of ingredients and raw materials;
- the failure to perform satisfactorily by third parties upon which we expect to rely to manufacture and supply products may lead to supply shortfalls;
- we are subject to intense competition for our skilled personnel, and the loss of key personnel or the inability to attract additional personnel could impair our ability to conduct our operations;
- we may be subject to litigation in the future;
- we are subject to the risk of product liability claims for which we may not have adequate insurance coverage;
- claims of creditors of our subsidiaries will generally have priority as to the assets of such subsidiaries over our claims and those of our creditors and shareholders;
- it may be difficult for U.S. investors to obtain and enforce judgments against us because of our Canadian incorporation and German presence;
- we can provide no assurance that we will, at all times in the future, be able to report that our internal controls over financial reporting are effective;
- we may have material weaknesses in our internal controls over financial reporting which could have a material adverse effect on the price of our Common Shares
- we are subject to environmental laws and may be subject to environmental remediation obligations. The impact of these obligations may have a material adverse effect on our business;
- we may incur losses associated with foreign currency fluctuations;
- legislative actions, new accounting pronouncements and higher insurance costs may adversely impact our future financial position or results of operations;
- data security breaches may disrupt our operations and adversely affect our operating results;
- our share price is volatile, which may result from factors outside of our control;
- we do not intend to pay dividends in the near future;
- future issuances of securities and hedging activities may depress the trading price of our Common Shares;
- in the event we were to lose our foreign private issuer status as of June 30 of a given financial year, we would be required to comply with the Securities Exchange Act of 1934 domestic reporting regime, which could cause us to incur additional legal, accounting and other expenses;
- our articles of incorporation contain “blank check” preferred share provisions, which could delay or impede an acquisition of our company; and
- our business could be negatively affected as a result of the actions of activist shareholders.

More detailed information about these and other factors is included under “Risk Factors” in this Prospectus and in other documents incorporated herein by reference. Investors should consult the Company’s quarterly and annual filings with the Canadian and U.S. securities commissions for additional information on risks and uncertainties. Many of these factors are beyond our control. Future events may vary substantially from what we currently foresee. You should not place undue reliance on such forward-looking statements. The Company disavows and is under no obligation to update or alter such forward-looking statements whether as a result of new information, future results, events, developments or otherwise, unless required to do so by a governmental authority or applicable law.

USE OF PROCEEDS

Any selling shareholder will receive all of the net proceeds from the sales of our Common Shares offered by such selling shareholder pursuant to this prospectus.

SELLING SHAREHOLDERS

August 2020 Offering

On August 5, 2020, we issued to certain institutional investors unregistered warrants (the “Investor Warrants” or the “Warrants”) to purchase, in the aggregate, up to 372,836 of our Common Shares at an exercise price of \$11.75 per share in a private placement pursuant to a Securities Purchase Agreement, dated August 3, 2020, among the Company and the purchasers party thereto, which agreement also provided for the registered offering to such investors of an aggregate of 497,115 Common Shares and associated Common Share purchase rights, for an offering price of \$14.08 per Common Share, associated purchase right and Investor Warrant to purchase 0.75 of a Common Share (collectively, the “Offering”). The Investor Warrants are exercisable immediately following issuance and have an exercise price of \$11.75 per share. The warrants will expire five and one-half years from the date of issuance. A holder will not have the right to exercise any portion of the Investor Warrants if the holder (together with its affiliates) would beneficially own in excess of 4.99% or 9.99% 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 Investor Warrants. However, any holder may increase or decrease such percentage not to exceed 9.99% of the common shares outstanding immediately after giving effect to the exercise, provided that any increase will not be effective until the 61st day after such election.

If a registration statement registering the issuance of the Common Shares underlying the Investor Warrants under the Securities Act is not effective or available or an exemption from registration under the Securities Act is not available for the issuance of such shares, the holder may, in its sole discretion, elect to exercise the Investor Warrants 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 Investor Warrants.

The Investor Warrants or the Common Shares issuable upon exercise of the Investor Warrants have not been registered under the Securities Act, or any state securities laws. The Investor Warrants were issued in reliance upon the exemption from the registration requirements of the Securities Act under Section 4(a)(2) of the Securities Act regarding transactions not involving a public offering, including Rule 506 of Regulation D promulgated thereunder. We made this determination based on the representations that each investor party is an “accredited investor” within the meaning of Rule 501 of Regulation D.

Investor Warrants to purchase an aggregate of 69,241 Common Shares remain unexercised.

H.C. Wainwright & Co., LLC (the “Placement Agent”), a registered broker dealer, and/or any of its affiliates previously served as our exclusive placement agent for the Offering, as sales agent for an at-the-market offering pursuant to a sales agreement dated April 27, 2017 and as financial advisor from time to time in the ordinary course of their business, for which they have received customary fees and commissions.

Information About Selling Shareholder Offering

We are registering the resale of the above-referenced Common Shares, and associated Common Share purchase rights, to permit each of the selling shareholders identified below, or their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part, to resell or otherwise dispose of the Common Shares in the manner contemplated under “Plan of Distribution” in this prospectus (as may be supplemented and amended). This prospectus covers the sale or other disposition by the selling shareholders of up to the total number of Common Shares issuable upon cash exercise of the Warrants issued to investors in August 2020, which are held by the selling shareholders. Throughout this prospectus, when we refer to the Common Shares being registered on behalf of the selling shareholders, we are referring to the Common Shares issuable upon cash exercise of the Warrants, and when we refer to the selling shareholders in this prospectus, we are referring to the current holders of the warrants issued to investors in August 2020 and their permitted transferees or other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part.

The selling shareholders may sell some, all or none of their Common Shares. We do not know when or whether any of the selling shareholders will exercise their Warrants, nor do we know how long the selling shareholders will hold their Common Shares before selling them, and we currently have no agreements, arrangements or understandings with the selling shareholders regarding the exercise of any Warrants, or the sale or other disposition of any of the Common Shares. The Common Shares covered hereby may be offered from time to time by the selling shareholders.

The following table sets forth the name of each of the selling shareholders, the number of our Common Shares beneficially owned by the selling shareholders as of May 5, 2023, the number of our Common Shares issuable upon exercise of Warrants that may be offered under this prospectus, and the number and percentage of our Common Shares beneficially owned by the selling shareholders assuming all of the Common Shares registered hereunder are sold. Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our Common Shares. Generally, a person “beneficially owns” Common Shares if the person has or shares with others the right to vote those shares or to dispose of them, or if the person has the right to acquire voting or disposition rights within 60 days. The number of Common Shares in the column “Number of Shares Offered” represents all of the Common Shares that a selling shareholder may offer and sell from time to time under this prospectus.

The information in the table below and the footnotes thereto regarding Common Shares to be beneficially owned after the offering assumes that the selling shareholders have exercised their Warrants in full pursuant to cash exercises and further assumes the sale of all Common Shares being offered by the selling shareholders under this prospectus.

Unless otherwise indicated, all information contained in the table below and the footnotes thereto is based upon information provided to us by the selling shareholders. The percentage of shares owned prior to and after the offering is based on 4,855,876 of our Common Shares outstanding as of May 5, 2023. Unless otherwise indicated in the footnotes to this table, we believe that each of the selling shareholders named in this table has sole voting and investment power with respect to the Common Shares indicated as beneficially owned. Except as otherwise indicated in this section, based on the information provided to us by the selling shareholders, and to the best of our knowledge, none of the selling shareholders is a broker-dealer or an affiliate of a broker-dealer.

	Total Number of Common Shares Beneficially Owned Prior to the Offering	Total Number of Common Shares Registered Hereby for sale	Percentage of common shares beneficially owned prior to the offering	Common Shares Beneficially Owned After the Offering	Percentage of common shares beneficially owned after the offering
CVI Investments, Inc. By: Heights Capital Management, Inc. its authorized agent (1)	69,284	37,284	*	32,000	*
Lind Global Macro Fund, LP (2)	96,860	21,305	*	75,555	*
H.C. Wainwright & Co., LLC (3)	10,652	10,652	*	-	-
Total Common Shares Registered Hereby:		69,241			

* Less than 1%.

** Subject to a 4.99% or 9.99% blocker. See “—August 2020 Offering” above and notes below.

(1) Consists of 69,284 Common Shares underlying warrants, without giving effect to limitations on beneficial ownership set forth therein. Heights Capital Management, Inc., the authorized agent of CVI Investments, Inc. (“CVI”), has discretionary authority to vote and dispose of the shares held by CVI and may be deemed to be the beneficial owner of these shares. Martin Kobinger, in his capacity as Investment Manager of Heights Capital Management, Inc., may also be deemed to have investment discretion and voting power over the shares held by CVI. Mr. Kobinger disclaims any such beneficial ownership of the shares. CVI Investments, Inc. is affiliated with one or more FINRA member, none of whom are currently expected to participate in the sale pursuant to the prospectus contained in the Registration Statement of Shares purchased by the Investor in this Offering. The principal business address of CVI Investments Inc., is c/o Heights Capital Management, Inc., 101 California Street, Suite 3250, SF, CA 94111.

(2) Consists of 96,860 Common Shares underlying warrants, without giving effect to limitations on beneficial ownership set forth therein. Each of the warrants includes a provision limiting the holder’s ability to exercise the warrants if such exercise would cause the holder to beneficially own greater than 9.99% of the Company. The principal business address of Lind Global Macro Fund, LP is 444 Madison Ave, 41st floor, New York, NY 10022. Lind Global Partners LLC, the general partner of Lind Global Macro Fund, LP, may be deemed to have sole voting and dispositive power with respect to the shares held by Lind Global Macro Fund, LP. Jeff Easton, the managing member of Lind Global Partners LLC and the general partner of Lind Global Macro Fund, LP, may be deemed to have sole voting and dispositive power with respect to the shares held by Lind Global Macro Fund, LP.

(3) Consists of 10,652 Common Shares underlying warrants, without giving effect to limitations on beneficial ownership set forth therein. The principal business address of H.C. Wainwright & Co., LLC is 430 Park Avenue, New York, NY 10022.

DESCRIPTION OF SHARE CAPITAL

Our authorized share capital structure consists of an unlimited number of shares of the following classes (all classes are without nominal or par value): Common Shares; and first preferred shares (the “First Preferred Shares”) and second preferred shares (the “Second Preferred Shares” and, together with the First Preferred Shares, the “Preferred Shares”), each issuable in series. As of May 5, 2023, there were 4,855,876 Common Shares issued and outstanding, which have associated Common Share purchase rights under our Shareholder Rights Plan Agreement. No Preferred Shares have been issued to date.

Common Shares

The holders of the Common Shares are entitled to one vote for each Common Share held by them at all meetings of shareholders, except meetings at which only shareholders of a specified class of shares are entitled to vote. In addition, the holders are entitled to receive dividends if, and when, declared by the Board of Directors on the Common Shares. Finally, the holders of the Common Shares are entitled to receive the remaining property of the Company upon any liquidation, dissolution or winding-up of the affairs of the Company, whether voluntary or involuntary. Shareholders have no liability to further capital calls as all issued and outstanding shares are fully paid and non-assessable. Additional information on our share capital is provided in our Annual Report on Form 20-F for the year ended December 31, 2022 filed with the SEC on March 23, 2023, incorporated by reference to this prospectus.

Shareholder Rights Plan

The Board of Directors approved a shareholder rights plan of the Company on March 29, 2016, which was approved, ratified and confirmed by the shareholders at the annual and special meeting of shareholders of the Company on May 10, 2016 (the “2016 Rights Plan”). The 2016 Rights Plan was implemented to ensure, to the extent possible, that all of our shareholders are treated fairly in connection with any take-over bid or other acquisition of control of the Company.

The Board of Directors reviewed the terms of the 2016 Rights Plan for conformity with current Canadian securities laws, as well as the evolving practices of public corporations in Canada, with respect to shareholder rights plan design and made some minor amendments thereto as a result.

The Board of Directors determined it appropriate and in the best interests of the shareholders to continue the 2016 Rights Plan and approved the amended and restated shareholder rights plan (the “Rights Plan”) on March 26, 2019. The Rights Plan took effect immediately upon receipt of approval of the shareholders of the Company at the annual and special meeting of shareholders held on May 8, 2019.

The fundamental objectives of the Rights Plan are to provide adequate time for our Board of Directors and shareholders to assess an unsolicited take-over bid for us, to provide the Board of Directors with sufficient time to explore and develop alternatives for maximizing shareholder value if a take-over bid is made, and to provide shareholders with an equal opportunity to participate in a take-over bid. The Rights Plan encourages a potential acquirer who makes a take-over bid to proceed either by way of a “Permitted Bid,” which requires a take-over bid to satisfy certain minimum standards designed to promote fairness, or with the concurrence of our Board of Directors. If a takeover bid fails to meet these minimum standards and the Rights Plan is not waived by the Board of Directors, the Rights Plan provides that holders of Common Shares, other than the acquirer, will be able to purchase additional Common Shares at a significant discount to market, thus exposing the person acquiring Common Shares to substantial dilution of its holdings.

Pursuant to the terms of the Rights Plan, one right was issued in respect of each common share outstanding at 5:01 p.m. on March 29, 2016 (the “Record Time”). In addition, we will issue one right for each additional Common Share issued after the Record Time and prior to the earlier of the Separation Time (as defined in the Rights Plan) and the Expiration Time (as defined in the Rights Plan). The rights have an initial exercise price equal to the Market Price (as defined in the Rights Plan) of the Common Shares as determined at the Separation Time, multiplied by five, subject to certain anti-dilution adjustments (the “Exercise Price”), and they are not exercisable until the Separation Time. Upon the occurrence of a Flip-in Event (as defined in the Rights Plan), each right will entitle the holder thereof, other than an Acquiring Person (as defined in the Rights Plan) or any other person whose rights are or become void pursuant to the provisions of the Rights Plan, to purchase from us, effective at the close of business on the eighth trading day after the Stock Acquisition Date (as defined in the Rights Plan), upon payment to us of the Exercise Price, Common Shares having an aggregate Market Price equal to twice the Exercise Price on the date of consummation or occurrence of such Flip-in Event, subject to certain anti-dilution adjustments.

The Rights Plan is described in detail in our Annual Report on Form 20-F for the year ended December 31, 2022 filed with the SEC on March 23, 2023, incorporated by reference to this prospectus.

Listing

Our Common Shares are listed on the NASDAQ Capital Market and on the TSX under the symbol “AEZS”.

Transfer Agent and Registrar

The transfer agent and registrar for our Common Shares (and associated Common Share purchase rights) is Computershare Trust Company of Canada, 1500 University Street, 7th Floor, Montreal, Quebec, H3A 358.

INCOME TAX CONSIDERATIONS

THE FOLLOWING SUMMARY IS OF A GENERAL NATURE ONLY AND IS NOT INTENDED TO BE, NOR SHOULD IT BE CONSTRUED TO BE, LEGAL OR TAX ADVICE TO ANY PARTICULAR INVESTOR. CONSEQUENTLY, PROSPECTIVE INVESTORS ARE URGED TO CONSULT THEIR OWN TAX ADVISORS FOR ADVICE AS TO THE TAX CONSEQUENCES OF AN INVESTMENT IN THE SECURITIES OFFERED BY THIS PROSPECTUS HAVING REGARD TO THEIR PARTICULAR CIRCUMSTANCES.

Material U.S. Federal Income Tax Considerations for U.S. Holders

The following discussion is a summary of the material U.S. federal income tax consequences applicable to the purchase, ownership and disposition of Common Shares being offered by this prospectus by a U.S. Holder (as defined below), but does not purport to be a complete analysis of all potential U.S. federal income tax effects.

This summary is based on the *Internal Revenue Code of 1986*, as amended (the “Code”), U.S. Treasury regulations promulgated thereunder, IRS rulings and judicial decisions in effect on the date of this prospectus. All of these are subject to change, possibly with retroactive effect, or different interpretations. This summary does not discuss the potential effects, whether adverse or beneficial, of any proposed legislation that, if enacted, could be applied on a retroactive basis. This summary is not binding on the IRS, and the IRS is not precluded from taking a position that is different from, and contrary to, the positions taken in this summary.

This summary does not address all aspects of U.S. federal income taxation that may be relevant to particular U.S. Holders in light of their specific circumstances (for example, U.S. Holders subject to the alternative minimum tax or the Medicare contribution tax on net investment income under the Code) or to holders that may be subject to special rules under U.S. federal income tax law, including, without limitation:

- dealers in stocks, securities or currencies;
- securities traders that use a mark-to-market accounting method;
- banks and financial institutions;

- insurance companies;
- regulated investment companies;
- real estate investment trusts;
- tax-exempt organizations;
- retirement plans, individual plans, individual retirement accounts and tax-deferred accounts;
- partnerships or other pass-through entities for U.S. federal income tax purposes and their partners or members;
- persons holding Common Shares as part of a hedging or conversion transaction straddle or other integrated or risk reduction transaction;
- persons who or that are, or may become, subject to the expatriation provisions of the Code;
- persons whose functional currency is not the U.S. dollar; and
- direct, indirect or constructive owners of 10% or more of the total combined voting power of all classes of our voting stock or 10% or more of the total value of shares of all classes of our stock.

This summary also does not discuss any aspect of state, local or foreign law, or estate or gift tax law as applicable to U.S. Holders. In addition, this discussion is limited to U.S. Holders purchasing Common Shares pursuant to this prospectus and that will hold such Common Shares as capital assets. For purposes of this summary, “U.S. Holder” means a beneficial holder of Common Shares who or that for U.S. federal income tax purposes is:

- an individual citizen or resident of the U.S.;
- a corporation or other entity classified as a corporation for U.S. federal income tax purposes created or organized in or under the laws of the U.S., any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, if (a) a court within the U.S. is able to exercise primary supervision over the administration of such trust and one or more “U.S. persons” (within the meaning of the Code) have the authority to control all substantial decisions of the trust, or (b) a valid election is in effect to be treated as a U.S. person for U.S. federal income tax purposes.

If a partnership or other entity or arrangement classified as a partnership for U.S. federal income tax purposes holds Common Shares, the U.S. federal income tax treatment of a partner generally will depend on the status of the partner and the activities of the partnership. This summary does not address the tax consequences to any such partner. Such a partner should consult its own tax advisor as to the tax consequences of the partnership purchasing, owning and disposing of Common Shares.

PROSPECTIVE INVESTORS SHOULD CONSULT THEIR OWN TAX ADVISORS WITH REGARD TO THE APPLICATION OF THE TAX CONSEQUENCES DESCRIBED BELOW TO THEIR PARTICULAR SITUATIONS AS WELL AS THE APPLICATION OF ANY STATE, LOCAL, FOREIGN OR OTHER TAX LAWS, INCLUDING GIFT AND ESTATE TAX LAWS.

Tax Consequences if we are a Passive Foreign Investment Company

A foreign corporation will be classified as a PFIC for any taxable year in which, after taking into account the income and assets of the corporation and certain subsidiaries pursuant to applicable “look-through rules,” either (i) at least 75% of its gross income is “passive income” or (ii) at least 50% of the average quarterly value of its assets is attributable to assets which produce passive income or are held for the production of passive income. Passive income generally includes dividends, interest, rents and royalties (other than certain rents and royalties derived in the active conduct of a trade or business), annuities and gains from assets that produce passive income. If a non-U.S. corporation owns at least 25% by value of the stock of another corporation, the non-U.S. corporation is treated for purposes of the PFIC tests as owning its proportionate share of the assets of the other corporation and as receiving directly its proportionate share of the other corporation’s income.

The determination of whether we are, or will be, a PFIC for a taxable year depends, in part, on the application of complex U.S. federal income tax rules, which are subject to various interpretations. Although the matter is not free from doubt, we believe that we were not a PFIC during our 2020 taxable year and will not likely be a PFIC during our 2021 taxable year. Because PFIC status is based on our income, assets and activities for the entire taxable year, and our market capitalization, it is not possible to determine whether we will be characterized as a PFIC for the 2021 taxable year until after the close of the taxable year. The tests for determining PFIC status are subject to a number of uncertainties. These tests are applied annually, and it is difficult to accurately predict future income, assets and activities relevant to this determination. In addition, because the market price of our Common Shares is likely to fluctuate, the market price may affect the determination of whether we will be considered a PFIC. There can be no assurance that we will not be considered a PFIC for any taxable year (including our 2021 taxable year). Prospective investors should consult their tax advisors regarding the Company’s PFIC status.

If the Company is classified as a PFIC for any taxable year during which a U.S. Holder owns Common Shares, the U.S. Holder, absent certain elections (including the mark-to-market and QEF elections described below), will generally be subject to adverse rules

(regardless of whether the Company continues to be classified as a PFIC) with respect to (i) any “excess distributions” (generally, any distributions received by the U.S. Holder on the Common Shares in a taxable year that are greater than 125% of the average annual distributions received by the U.S. Holder in the three preceding taxable years or, if shorter, the U.S. Holder’s holding period for the Common Shares) and (ii) any gain realized on the sale or other disposition of the Common Shares.

Under these adverse rules (a) the excess distribution or gain will be allocated ratably over the U.S. Holder’s holding period, (b) the amount allocated to the current taxable year and any taxable year prior to the first taxable year in which the Company is classified as a PFIC will be taxed as ordinary income and (c) the amount allocated to each of the other taxable years during which the Company was classified as a PFIC will be subject to tax at the highest rate of tax in effect for the applicable category of taxpayer for that year and an interest charge will be imposed with respect to the resulting tax attributable to each such other taxable year. A U.S. Holder that is not a corporation will be required to treat any such interest paid as “personal interest,” which is not deductible.

U.S. Holders can avoid the adverse rules described above in part by making a mark-to-market election with respect to the Common Shares, provided that the Common Shares are “marketable.” The Common Shares will be marketable if they are “regularly traded” on a “qualified exchange” or other market within the meaning of applicable U.S. Treasury regulations. For this purpose, the Common Shares generally will be considered to be regularly traded during any calendar year during which they are traded, other than in *de minimis* quantities, on at least 15 days during each calendar quarter. The Common Shares are currently listed on the NASDAQ, which constitutes a qualified exchange; however, there can be no assurance that the Common Shares will be treated as regularly traded for purposes of the mark-to-market election on a qualified exchange. If the Common Shares were not regularly traded on the NASDAQ or were delisted from the NASDAQ and were not traded on another qualified exchange for the requisite time period described above, the mark-to-market election would not be available.

A U.S. Holder that makes a mark-to-market election must include in gross income, as ordinary income, for each taxable year an amount equal to the excess, if any, of the fair market value of the U.S. Holder’s Common Shares at the close of the taxable year over the U.S. Holder’s adjusted tax basis in the Common Shares. An electing U.S. Holder may also claim an ordinary loss deduction for the excess, if any, of the U.S. Holder’s adjusted tax basis in the Common Shares over the fair market value of the Common Shares at the close of the taxable year, but this deduction is allowable only to the extent of any net mark-to-market gains previously included in income. A U.S. Holder that makes a mark-to-market election generally will adjust such U.S. Holder’s tax basis in the Common Shares to reflect the amount included in gross income or allowed as a deduction because of such mark-to-market election. Gains from an actual sale or other disposition of the Common Shares will be treated as ordinary income, and any losses incurred on a sale or other disposition of the Common Shares will be treated as ordinary losses to the extent of any net mark-to-market gains previously included in income.

If we are classified as a PFIC for any taxable year in which a U.S. Holder owns Common Shares, but before a mark-to-market election is made, the adverse PFIC rules described above will apply to any mark-to-market gain recognized in the year the election is made. Otherwise, a mark-to-market election will be effective for the taxable year for which the election is made and all subsequent taxable years. The election cannot be revoked without the consent of the IRS unless the Common Shares cease to be marketable, in which case the election is automatically terminated.

If the Company is classified as a PFIC, a U.S. Holder of Common Shares will generally be treated as owning stock owned by the Company in any direct or indirect subsidiaries that are also PFICs and will be subject to similar adverse rules with respect to distributions to the Company by, and dispositions by the Company of, the stock of such subsidiaries. A mark-to-market election is not permitted for the shares of any subsidiary of the Company that is also classified as a PFIC. Prospective investors should consult their tax advisors regarding the availability of, and procedure for making, a mark-to-market election.

In some cases, a shareholder of a PFIC can avoid the interest charge and the other adverse PFIC consequences described above by making a QEF election to be taxed currently on its share of the PFIC’s undistributed income. We will endeavor to satisfy the record keeping requirements that apply to a QEF and to supply requesting U.S. Holders with the information that such U.S. Holders are required to report under the QEF rules. There can be no assurance, however, that we will satisfy the record keeping requirements or provide the information required to be reported by U.S. Holders.

A U.S. Holder that makes a timely and effective QEF election for the first tax year in which its holding period of its Common Shares begins generally will not be subject to the adverse PFIC consequences described above with respect to its Common Shares. Rather, a U.S. Holder that makes a timely and effective QEF election will be subject to U.S. federal income tax on such U.S. Holder’s pro rata share of (a) the Company’s net capital gain, which will be taxed as long-term capital gain to such U.S. Holder, and (b) the Company’s ordinary earnings, which will be taxed as ordinary income to such U.S. Holder, in each case regardless of which such amounts are actually distributed to the U.S. Holder by the Company. Generally, “net capital gain” is the excess of (i) net long-term capital gain over (ii) net short-term capital loss, and “ordinary earnings” are the excess of (A) “earnings and profits” over (B) net capital gain.

A U.S. Holder that makes a timely and effective QEF election with respect to the Company generally (a) may receive a tax-free distribution from us to the extent that such distribution represents “earnings and profits” that were previously included in income by the U.S. Holder because of such QEF election and (b) will adjust such U.S. Holder’s tax basis in the Common Shares to reflect the amount included in income or allowed as a tax-free distribution because of such QEF election. In addition, a U.S. Holder that makes a QEF election generally will recognize capital gain or loss on the sale or other taxable disposition of Common Shares.

The QEF election is made on a shareholder-by-shareholder basis. Once made, a QEF election will apply to the tax year for which the QEF election is made and to all subsequent tax years, unless the QEF election is invalidated or terminated or the IRS consents to revocation of the QEF election. In addition, if a U.S. Holder makes a QEF election, the QEF election will remain in effect

(although it will not be applicable) during those tax years in which we are not a PFIC.

If the Company is classified as a PFIC and then ceases to be so classified, a U.S. Holder may make an election (a “deemed sale election”) to be treated for U.S. federal income tax purposes as having sold such U.S. Holder’s Common Shares on the last day of the taxable year of the Company during which it was a PFIC. A U.S. Holder that made a deemed sale election would then cease to be treated as owning stock in a PFIC by reason of ownership of Common Shares in the Company. Any gain recognized, however, as a result of making the deemed sale election would be subject to the adverse rules described above and loss would not be recognized.

If the Company is a PFIC in any year with respect to a U.S. Holder, the U.S. Holder will be required to file an annual information return on IRS Form 8621 regarding distributions received on Common Shares and any gain realized on the disposition of Common Shares.

In addition, if the Company is a PFIC, U.S. Holders will generally be required to file an annual information return with the IRS (also on IRS Form 8621, which PFIC shareholders are required to file with their U.S. federal income tax or information returns) relating to their ownership of Common Shares.

Prospective investors should consult their tax advisors regarding the potential application of the PFIC regime and any reporting obligations to which they may be subject under that regime.

Taxation of Distributions

Subject to the PFIC rules discussed above, any distributions paid by us out of current or accumulated earnings and profits (as determined for U.S. federal income tax purposes), before reduction for any Canadian withholding tax paid with respect thereto, will generally be taxable to a U.S. Holder as foreign source dividend income, and generally will not be eligible for the dividends received deduction generally allowed to corporations.

Distributions in excess of current and accumulated earnings and profits will be treated as a non-taxable return of capital to the extent of the U.S. Holder’s adjusted tax basis in the Common Shares and, thereafter, as capital gain. We do not, however, intend to calculate our earnings and profits under U.S. federal income tax principles. Therefore, U.S. Holders should expect that any distribution from us generally will be treated for U.S. federal income tax purposes as a dividend. Prospective investors should consult their own tax advisors with respect to the appropriate U.S. federal income tax treatment of any distribution received from us.

Dividends paid to non-corporate U.S. Holders by us in a taxable year in which we are treated as a PFIC, or in the immediately following taxable year, will not be eligible for the special reduced rates normally applicable to long-term capital gains. In all other taxable years, dividends paid by us should be taxable to a non-corporate U.S. Holder at the special reduced rates normally applicable to long-term capital gains, provided that certain conditions are satisfied (including a minimum holding period requirement). We believe we were not a PFIC for the 2020 taxable year. However, no assurance can be provided that we will not be classified as a PFIC for 2021 and, therefore, no assurance can be provided that a U.S. Holder will be able to claim a reduced rate for dividends paid in 2020 or 2021 (if any). Please see the subsection above entitled “Material U.S. Federal Income Tax Considerations for U.S. Holders — Tax Consequences if we are a Passive Foreign Investment Company” for a more detailed discussion.

Under current law, payments of dividends by us to non-Canadian investors are generally subject to a 25% Canadian withholding tax. The rate of withholding tax applicable to U.S. Holders that are eligible for benefits under the Canada-United States Tax Convention (the “Convention”) is reduced to a maximum of 15% (or 5% in the case of a U.S. holder that is a company beneficially owning at least 10% of the Company’s voting shares). This reduced rate of withholding will not apply if the dividends received by a U.S. Holder are effectively connected with a permanent establishment of the U.S. Holder in Canada. In such case, the provisions of Article VII (Business Profits) of the Convention should apply. For U.S. federal income tax purposes, U.S. Holders will be treated as having received the amount of Canadian taxes withheld by the Company, and as then having paid over the withheld taxes to the Canadian taxing authorities. As a result of this rule, the amount of dividend income included in gross income for U.S. federal income tax purposes by a U.S. Holder with respect to a payment of dividends may be greater than the amount of cash actually received (or receivable) by the U.S. Holder from the Company with respect to the payment.

Subject to certain limitations, a U.S. Holder will generally be entitled, at the election of the U.S. Holder, to a credit against its U.S. federal income tax liability, or a deduction in computing its U.S. federal taxable income, for Canadian income taxes withheld by us. This election is made on a year-by-year basis and applies to all foreign taxes paid (whether directly or through withholding) by a U.S. Holder during a year. For purposes of the foreign tax credit limitation, dividends paid by us generally will constitute foreign source income in the “passive category income” basket. The foreign tax credit rules are complex and prospective investors should consult their tax advisors concerning the availability of the foreign tax credit in their particular circumstances.

Dividends paid in Canadian dollars will be included in the gross income of a U.S. Holder in a U.S. dollar amount calculated by reference to the exchange rate in effect on the date the U.S. Holder (actually or constructively) receives the dividend, regardless of whether such Canadian dollars are actually converted into U.S. dollars at that time. If the Canadian dollars received are not converted into U.S. dollars on the date of receipt, a U.S. Holder will have a tax basis in the Canadian dollars equal to their U.S. dollar value on the date of receipt. Gain or loss, if any, realized on a sale or other disposition of the Canadian dollars will generally be U.S. source ordinary income or loss to a U.S. Holder.

We generally do not pay any dividends and do not anticipate paying any dividends in the foreseeable future.

Sale, Exchange or Other Taxable Disposition of Common Shares

Subject to the PFIC rules discussed above, upon a sale, exchange or other taxable disposition of Common Shares, a U.S. Holder generally will recognize capital gain or loss for U.S. federal income tax purposes equal to the difference, if any, between the amount realized on the sale, exchange or other taxable disposition and the U.S. Holder’s adjusted tax basis in the Common Shares.

This capital gain or loss will be long-term capital gain or loss if the U.S. Holder's holding period in the Common Shares exceeds one year. The deductibility of capital losses is subject to limitations. Any gain or loss will generally be U.S. source for U.S. foreign tax credit purposes.

Information Reporting and Backup Withholding

In general, information reporting for U.S. federal income tax purposes should apply to distributions made on our securities within the United States to a U.S. Holder (other than an exempt recipient) and to the proceeds from sales and other dispositions of our securities by a U.S. Holder (other than an exempt recipient) to or through a U.S. office of a broker. Payments made (and sales and other dispositions effected at an office) outside the United States will be subject to information reporting in limited circumstances. In addition, certain information concerning a U.S. Holder's adjusted tax basis in securities it owns and adjustments to that tax basis and whether any gain or loss with respect to such securities is long term or short term also may be required to be reported to the IRS.

In addition, U.S. federal income tax information reporting rules generally require certain individuals who are U.S. Holders to file IRS Form 8938 to report the ownership of specified foreign financial assets if the total value of those assets exceeds an applicable threshold amount (subject to certain exceptions). For these purposes, a specified foreign financial asset includes not only a financial account (as defined for these purposes) maintained by a foreign financial institution, but also any stock or security issued by a non-U.S. person, any financial instrument or contract held for investment that has an issuer or counterparty other than a U.S. person and any interest in a foreign entity, provided that the asset is not held in an account maintained by a financial institution. The minimum applicable threshold amount is generally U.S. \$50,000 in the aggregate, but this threshold amount varies depending on whether the individual lives in the U.S., is married, files a joint income tax return with his or her spouse, and on certain other factors. Certain domestic entities that are U.S. Holders may also be required to file IRS Form 8938 if both (i) such entities are owned at least 80% by an individual who is a U.S. citizen or U.S. tax resident (or in some cases, by a nonresident alien who meets certain criteria) or are trusts with beneficiaries that are such individuals and (ii) more than 50% of their income consists of certain passive income or more than 50% of their assets is held for the production of such income. U.S. Holders are urged to consult with their tax advisors regarding their reporting obligations, including the requirement to file IRS Form 8938.

U.S. Holders who transfer more than \$100,000 to us in a 12-month period (and/or who become owners of 10% or more of our securities) will be required to file IRS Form 926, Return by U.S. Transferor of Property to a Foreign Corporation, and U.S. Holders who become holder of more than 10% of our securities may also have to file IRS Form 5471, Information Return of U.S. Persons With Respect to Certain Foreign Corporations, in each case reporting transfers of cash or other property to us and information relating to the U.S. Holder and us. Substantial penalties may be imposed upon a U.S. Holder that fails to comply with these filing requirements. U.S. Holders should consult their own tax advisors about the need to file either of these forms. See also the discussion, above, regarding IRS Form 8621, Information Return by a Shareholder of a Passive Foreign Investment Company or Qualified Electing Fund.

Backup withholding of U.S. federal income tax, currently at a rate of 24%, generally will apply to dividends paid on our securities to a U.S. Holder (other than an exempt recipient) and the proceeds from sales and other dispositions of our securities by a U.S. Holder (other than an exempt recipient), in each case who:

- fails to provide an accurate taxpayer identification number;
- is notified by the IRS that backup withholding is required; or
- in certain circumstances, fails to comply with applicable certification requirements.

A non-U.S. Holder generally may eliminate the requirement for information reporting and backup withholding by providing certification of its foreign status, under penalties of perjury, on a duly executed applicable IRS Form W-8 or by otherwise establishing an exemption.

Backup withholding is not an additional tax. Rather, the amount of any backup withholding will be allowed as a credit against a U.S. Holder's U.S. federal income tax liability and may entitle such holder to a refund, provided that certain required information is timely furnished to the IRS.

Holders are urged to consult their own tax advisors regarding the application of backup withholding and the availability of and procedures for obtaining an exemption from backup withholding in their particular circumstances.

Canadian Federal Income Tax Considerations For U.S. Holders

The following is a general summary, as of the date hereof, of the principal Canadian federal income tax considerations generally applicable to the holding and disposition Common Shares acquired pursuant to this prospectus by a holder who, at all relevant times, (a) for the purposes of the Income Tax Act (Canada) (the "Tax Act"), (i) is not resident, or deemed to be resident, in Canada, (ii) deals at arm's length with, and is not affiliated with, the Company, (iii) beneficially owns Common Shares as capital property, (iv) does not use or hold the Common Shares in the course of carrying on, or otherwise in connection with, a business or a part of a business carried on or deemed to be carried on in Canada, and (v) is not a "registered non-resident insurer" or "authorized foreign bank" within the meaning of the Tax Act, and (b) for the purposes of the Convention, is a resident of the U.S., has never been a resident of Canada, does not have and has not had, at any time, a permanent establishment or fixed base in Canada, and is a qualifying person or otherwise qualifies for the full benefits of the Convention. Common Shares will generally be considered to be capital property to a holder unless such Common Shares are held in the course of carrying on a business of buying or selling securities or an adventure or concern in the nature of trade. Holders who meet all the criteria in clauses (a) and (b) are referred to herein as a "U.S. Holder" or "U.S. Holders." This summary does not deal with special situations, such as the particular circumstances of traders or dealers or holders who have entered or will enter into a "derivative forward agreement" (as defined in the Tax Act) in respect of any of the Common Shares. Such holders and other holders who do not meet the criteria in clauses (a) and (b) should

This summary is based upon the current provisions of the Tax Act and the regulations thereunder (the “Regulations”) and counsel’s understanding of the current administrative policies and assessing practices of the Canada Revenue Agency (the “CRA”) made publicly available prior to the date hereof. It also takes into account all proposed amendments to the Tax Act and the Regulations publicly released by the Minister of Finance (Canada) (the “Tax Proposals”) prior to the date hereof, and assumes that all such Tax Proposals will be enacted as currently proposed. No assurance can be given that the Tax Proposals will be enacted in the form proposed or at all. This summary does not otherwise take into account or anticipate any changes in law, whether by way of legislative, judicial or administrative action or interpretation, nor does it take into account tax laws of any province or territory of Canada or of any other jurisdiction outside Canada.

This summary is of a general nature only and is not intended to be, nor should it be construed to be, legal or tax advice to any particular U.S. Holder and no representation with respect to the federal income tax consequences to any particular U.S. Holder or prospective U.S. Holder is made. The tax consequences to a U.S. Holder will depend on the holder’s particular circumstances. Accordingly, U.S. Holders should consult with their own tax advisors for advice with respect to their own particular circumstances.

Currency Conversion

In general, for purposes of the Tax Act, all amounts relating to the acquisition, holding or disposition of the Common Shares must be converted into Canadian dollars based on the applicable exchange rate quoted by the Bank of Canada for the relevant day or such other rate of exchange that is acceptable to the Minister of National Revenue (Canada).

Dividends

Amounts paid or credited or deemed to be paid or credited as, on account or in lieu of payment, or in satisfaction of, dividends on the Common Shares to a U.S. Holder will be subject to Canadian withholding tax. Under the Convention, the rate of Canadian withholding tax on dividends paid or credited by the Company to a U.S. Holder that beneficially owns such dividends is generally 15% unless the beneficial owner is a company that owns at least 10% of the Company’s voting stock at that time, in which case the rate of Canadian withholding tax is reduced to 5%.

Dispositions

Upon the disposition of a Common Share, a U.S. Holder will realize a capital gain (or capital loss) in the taxation year of the disposition equal to the amount by which the U.S. Holder’s proceeds of disposition, net of any reasonable costs of disposition, exceed (or are exceeded by) the adjusted cost base to the U.S. Holder of the Common Shares immediately before the disposition or deemed disposition.

A U.S. Holder will not be subject to tax under the Tax Act in respect of any capital gain realized by such U.S. Holder on a disposition of Common Shares, unless such Common Shares constitute “taxable Canadian property” (as defined in the Tax Act) of the U.S. Holder at the time of disposition and the U.S. Holder is not entitled to relief under the Convention.

Provided that the Common Shares are listed on a designated stock exchange for purposes of the Tax Act (which currently includes the NASDAQ and the TSX) at the time of the disposition, the Common Shares generally will not constitute taxable Canadian property of a U.S. Holder, unless: (a) at any time during the 60-month period immediately preceding the disposition or deemed disposition of the Common Shares (as applicable): (i) 25% or more of the issued shares of any class or series of the share capital of the Company were owned by, or belonged to, one or any combination of (x) the U.S. Holder, (y) persons with whom the U.S. Holder did not deal at arm’s length (within the meaning of the Tax Act) and (z) partnerships in which the U.S. Holder or a person referred to in (y) holds a membership interest directly or indirectly through one or more partnerships; and (ii) more than 50% of the fair market value of the Common Shares was derived directly or indirectly from one or any combination of: (A) real or immovable property situated in Canada, (B) Canadian resource property (as defined in the Tax Act), (C) timber resource property (as defined in the Tax Act), and (D) options in respect of, or interests in, or for civil law rights in, property described in any of (A) through (C) above, whether or not such property exists; or (b) the Common Shares is deemed under the Tax Act to be taxable Canadian property.

If a Common Share is taxable Canadian property to a U.S. Holder, any capital gain realized on the disposition or deemed disposition of such Common Share may not be subject to Canadian federal income tax pursuant to the terms of the Convention. Non-Resident Holders whose Common Share may be taxable Canadian property should consult their own tax advisors.

PLAN OF DISTRIBUTION

We are registering the Common Shares (and associated purchase rights) issued and issuable upon exercise of the Warrants to permit the resale of these Common Shares by the holders of the Warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling shareholders of the Common Shares. We will bear all fees and expenses incident to our obligation to register the Common Shares.

The selling shareholders may sell all or a portion of the Common Shares beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the Common Shares are sold through underwriters or broker-dealers, the selling shareholders will be responsible for underwriting discounts or commissions or agent’s commissions. The Common Shares may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which

may involve crosses or block transactions,

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales;
- sales pursuant to Rule 144;
- broker-dealers may agree with the selling securityholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

If the selling shareholders effect such transactions by selling Common Shares to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling shareholders or commissions from purchasers of the Common Shares for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the Common Shares or otherwise, the selling shareholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the Common Shares in the course of hedging in positions they assume. The selling shareholders may also sell Common Shares short and deliver Common Shares covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling shareholders may also loan or pledge Common Shares to broker-dealers that in turn may sell such shares. The selling shareholders may pledge or grant a security interest in some or all of the Warrants or Common Shares owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the Common Shares from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended, amending, if necessary, the list of selling shareholders to include the pledgee, transferee or other successors in interest as selling shareholders under this prospectus. The selling shareholders also may transfer and donate the Common Shares in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling shareholders and any broker-dealer participating in the distribution of the Common Shares may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the Common Shares is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of Common Shares being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling shareholders and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers.

Under the securities laws of some states, the Common Shares may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the Common Shares may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with. There can be no assurance that any selling shareholder will sell any or all of the Common Shares registered pursuant to the registration statement, of which this prospectus is a part.

The selling shareholders and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the Common Shares by the selling shareholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the Common Shares to engage in marketmaking activities with respect to the Common Shares. All of the foregoing may affect the marketability of the Common Shares and the ability of any person or entity to engage in market-making activities with respect to the Common Shares. We will pay all expenses of the registration of the Common Shares, including, without limitation, Securities and Exchange Commission filing fees and expenses of compliance with state securities or “blue sky” laws; provided, however, that a selling shareholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the selling shareholders against liabilities, including some liabilities under the Securities Act, in accordance with the terms of the Warrants,

securities purchase agreements and/or engagement letters, as applicable, or the selling shareholders will be entitled to contribution. We may be indemnified by the selling shareholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling shareholder specifically for use in this prospectus, in accordance with the related agreement, or we may be entitled to contribution. Once sold under the registration statement of which this prospectus forms a part, the Common Shares will be freely tradable in the hands of persons other than our affiliates.

The securities offered by this Prospectus have not been qualified in Canada and may not be offered or sold in Canada except pursuant to a Canadian prospectus or prospectus exemption.

LEGAL MATTERS

The validity of the Common Shares issuable upon the exercise of the Warrants and certain other matters of Canadian law were passed upon for us by Norton Rose Fulbright Canada LLP.

EXPERTS

The consolidated financial statements as of December 31, 2022 and 2021 and for the years ended December 31, 2022 and 2021, incorporated into this Prospectus by reference to the Annual Report on Form 20-F for the year ended December 31, 2022, filed with the SEC on March 23, 2023, have been so incorporated in reliance on the report of Ernst & Young LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

The consolidated financial statements for the year ended December 31, 2020, incorporated into this Prospectus by reference to the Annual Report on Form 20-F for the year ended December 31, 2022, filed with the SEC on March 23, 2023, have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

ENFORCEABILITY OF CIVIL LIABILITIES

We are a corporation incorporated under and governed by the *CBCA*. Many of our officers and directors, and some of the experts named in this Prospectus, are residents of Canada or elsewhere outside of the U.S., and a substantial portion of our assets and the assets of such persons are located outside the U.S. As a result, it may be difficult for investors in the U.S. to effect service of process within the U.S. upon such directors, officers and representatives of experts who are not residents of the U.S. or to enforce against them judgments of a U.S. court predicated solely upon civil liability under U.S. federal securities laws or the securities laws of any state within the U.S. We have been advised by our legal counsel, Norton Rose Fulbright Canada LLP, that a judgment of a U.S. court predicated solely upon civil liability under U.S. federal securities laws would probably be enforceable in Canada if the U.S. court in which the judgment was obtained has a basis for jurisdiction in the matter that would be recognized by a Canadian court for the same purposes. We have also been advised by Norton Rose Fulbright Canada LLP, however, that there is substantial doubt as to whether an action could be brought in Canada in the first instance on the basis of liability predicated solely upon U.S. federal securities laws.

WHERE YOU CAN FIND MORE INFORMATION

We file annual reports on Form 20-F with the SEC, and we furnish other documents, such as quarterly and current reports, proxy statements and other information and documents that we file with the Canadian securities regulatory authorities, to the SEC, as required. The materials we file with or furnish to the SEC are available to the public on the SEC's Internet website at www.sec.gov. Those filings are also available to the public on our corporate website at www.zentaris.com. Information contained on our website is not a part of this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only. As we are a Canadian issuer, we also file continuous disclosure documents with the Canadian securities regulatory authorities, which documents are available on the System for Electronic Document Analysis and Retrieval website maintained by the Canadian Securities Administrators at www.sedar.com.

This prospectus forms part of a registration statement that we filed with the SEC. The registration statement contains more information than this prospectus regarding us and our Securities, including certain exhibits and schedules. You can obtain a copy of the registration statement from the SEC at the address listed above or electronically at www.sec.gov.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents have been filed with the various securities commissions or similar securities regulatory authorities in Canada and are specifically incorporated by reference into, and form an integral part of, this Prospectus:

- [our Annual Report on Form 20-F for the fiscal year ended December 31, 2022, filed with the SEC on March 23, 2023;](#)
- a Form 8-A12B/A filed with the SEC on [May 5, 2019](#) to amend our previously filed Form 8-A12B filed on [April 14, 2017](#);
- the Reports on Form 6-K furnished to the SEC on [January 17, 2023](#), [March 16, 2023](#), [March 23, 2023](#), [March 31, 2023](#), [April 5, 2023](#); and
- to the extent permitted by applicable securities law, any other documents which we elect to incorporate by reference into this Prospectus.

The information relating to us contained in this prospectus does not purport to be comprehensive and should be read together with the information contained in the documents incorporated or deemed to be incorporated by reference in this prospectus.

As you read the above documents, you may find inconsistencies in information from one document to another. If you find inconsistencies between the documents and this prospectus, you should rely on the statements made in the most recent document. All information appearing in this prospectus is qualified in its entirety by the information and financial statements, including the notes thereto, contained in the documents incorporated by reference herein.

Potential investors, including any beneficial owner, may obtain a copy of any of the documents summarized herein (subject to certain restrictions because of the confidential nature of the subject matter) or any of our SEC filings incorporated by reference herein without charge by written or oral request directed to:

Aeterna Zentaris Inc.
Attention: Investor Relations
315 Sigma Drive
Summerville, South Carolina
USA, 29486
Tel. (843) 900-3223

You should rely only on the information contained or incorporated by reference in this prospectus or a prospectus supplement. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus, or such earlier date, that is indicated in this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

**69,241 Common Shares
Issuable upon Exercise of Warrants**



Aeterna Zentaris Inc.

PROSPECTUS
May 5, 2023

PART II—INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 6. INDEMNIFICATION OF DIRECTORS AND OFFICERS

Under Section 124 of the CBCA, the registrant may indemnify a present or former director or officer of the registrant or another individual who acts or acted at the registrant's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the registrant or other entity. The registrant may not indemnify an individual unless the individual (i) acted honestly and in good faith with a view to the best interests of the registrant or, as the case may be, to the best interests of the other entity for which the individual acted as director or officer or in a similar capacity at the registrant's request, and (ii) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, had reasonable grounds for believing that his or her conduct was lawful. Such indemnification may be made in connection with an action by or on behalf of the registrant or other entity to procure a judgment in its favor only with court approval. A director or officer is entitled to indemnification from the registrant as a matter of right if he or she was not judged by the Court or other competent authority to have committed any fault or omitted to do anything that he or she ought to have done and fulfilled the conditions set forth above. The registrant may advance moneys to a director, officer or other individual for the costs, charges and expenses of a proceeding referred to above. The individual shall repay the moneys if he or she does not fulfill the conditions set forth above to qualify for indemnification.

In accordance with the provisions of the CBCA described above, the by-laws of the registrant provide that the Company shall, to the full extent provided by law, indemnify a director or officer of the Company, a former director or officer of the Company or another individual who acts or acted at the Company's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the corporation or other entity.

The by-laws of the registrant also provide that the registrant may, to the extent permitted by the CBCA, purchase and maintain insurance for the benefit of any person referred to above against any such liability as the board of directors of the registrant may from time to time determine.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the U.S. Securities and Exchange Commission, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

The registrant has also agreed to indemnify and save harmless the directors and its senior corporate officers as well as the managing director of its German subsidiary pursuant to various Director and Officer Indemnification Agreements against certain costs, charges, damages, awards, settlements, liabilities, interest, judgments, fines, penalties, statutory obligations, professional fees and retainers and other expenses of whatever nature or kind, provided that any such costs, charges, professional fees and other expenses are reasonable (collectively, "Expenses") and from and against all Expenses sustained or incurred by the indemnified party as a result of serving as a director, officer or employee of the registrant in respect of any act, matter, deed or thing whatsoever made, done, committed, permitted, omitted or acquiesced in by the indemnified party as a director, officer or employee of the registrant. The form of Director and Officer Indemnification Agreement has been furnished to the SEC as Exhibit 99.1 to the registrant's Report on Form 6-K dated October 21, 2016.

ITEM 7. RECENT SALES OF UNREGISTERED SECURITIES

Set forth below are the sales of all unregistered securities of ours sold by us within the past three years (i.e., since April 1, 2019, up to the date of this registration statement) which were not registered under the Securities Act:

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On August 3, 2020, the Company entered into a securities purchase agreement (the "August 2020 Securities Purchase Agreement") with institutional investors in the U.S. to purchase 497,115 Common Shares, at a purchase price of \$14.08 per share. Under the terms of the August 2020 Securities Purchase Agreement, the Company issued to the investors unregistered warrants to purchase up to an aggregate of 372,836 Common Shares in a concurrent private placement. The warrants have an exercise price of \$11.75 per common share, are exercisable immediately and will expire five and one-half years following the date of issuance. The gross proceeds from the offering totaled approximately \$7.0 million, before deducting placement agent fees and offering expenses.

On February 21, 2020, the Company entered into a securities purchase agreement (the "2020 Securities Purchase Agreement") with institutional investors in the U.S. to purchase 139,130 Common Shares, at a purchase price of \$32.34 per share. Under the terms of the 2020 Securities Purchase Agreement, the Company issued to the investors unregistered warrants to purchase up to an aggregate of 104,348 Common Shares in a concurrent private placement. The warrants have an exercise price of \$30.00 per common share, are exercisable immediately and will expire five and one-half years following the date of issuance. The gross proceeds from the offering totaled approximately \$4.5 million, before deducting placement agent fees and offering expenses.

On September 20, 2019, the Company entered into a securities purchase agreement with U.S. institutional investors to purchase \$5.0 million in gross proceeds (before transaction costs of \$0.8 million) of Common Shares for \$37.50 per share in a registered direct offering and warrants to purchase Common Shares in a concurrent private placement. Under the terms of the securities purchase agreement, the Company sold 133,000 common shares. In the concurrent private placement, the Company issued warrants to purchase up to an aggregate of 133,000 common shares. The warrants are exercisable commencing six months from the date of issuance, have an exercise price of \$41.25 per share and expire 5 years following the date of issuance.

The privately placed securities above were offered and sold pursuant to an exemption from the registration requirements under Section 4(a)(2) of the Securities Act and Rule 506 of Regulation D promulgated thereunder since, among other things, the transactions did not involve a public offering and the securities were acquired for investment purposes only and not with a view to or for sale in connection with any distribution thereof.

ITEM 8. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this registration statement:

See Exhibit Index attached to this registration statement, which is incorporated by reference herein.

(b) Financial Statement Schedules

None.

ITEM 9. UNDERTAKINGS

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a further post-effective amendment to this registration statement:

(i) To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of

Registration Fee” table in the effective registration statement; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

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(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment 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.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) To file a post-effective amendment to the registration statement to include any financial statements required by Item 8. A. of Form 20-F at the start of any delayed offering or throughout a continuous offering. Financial statements and information otherwise required by Section 10(a)(3) of the Securities Act of 1933 need not be furnished, *provided*, that the registrant includes in the prospectus, by means of a post-effective amendment, financial statements required pursuant to this paragraph (a) (4) and other information necessary to ensure that all other information in the prospectus is at least as current as the date of those financial statements.

(5) That, for the purpose of determining liability of the Registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) any preliminary prospectus or prospectus of the undersigned Registrant to the offering required to be filed pursuant to Rule 424;

(ii) any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by an undersigned Registrant;

(iii) the portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and

(iv) any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that:

(i) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933 shall be deemed to be part of the registration statement as of the time it was declared effective.

(ii) For the purpose of determining any liability under the Securities Act of 1933, 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.

(e) Insofar as indemnification for liabilities arising under the Securities Act of 1933 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 SEC such indemnification is against public policy as expressed in the Securities Act of 1933 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 whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

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EXHIBIT INDEX

Exhibit Index

- 3.1 [Restated Certificate of Incorporation and Restated Articles of Incorporation of the Registrant \(incorporated by reference to Exhibit 99.2 to the Registrant's report on Form 6-K furnished to the Commission on May 25, 2011\)](#)
- 3.2 [Certificate of Amendment and Articles of Amendment of the Registrant \(incorporated by reference to Exhibit 99.2 to the Registrant's report on Form 6-K furnished to the Commission on October 3, 2012\)](#)
- 3.3 [Certificate of Amendment and Articles of Amendment of the Registrant \(incorporated by reference to Exhibit 99.1 to the Registrant's report on Form 6-K furnished to the Commission on November 17, 2015\)](#)

- 3.4 [Amended and Restated By-Law One of the Registrant \(incorporated by reference to Exhibit 1.3 of the Registrant's Annual Report on Form 20-F for the financial year ended December 31, 2012 filed with the Commission on March 22, 2013\)](#)
- 4.1 [Amended and Restated Shareholder Rights Plan Agreement between the Registrant and Computershare Trust Company of Canada, as Rights Agent, dated as of May 8, 2019 \(incorporated by reference to Exhibit 99.2 to the Registrant's report on Form 6-K furnished to the Commission on May 9, 2019\)](#)
- 4.2 [Form of Warrant Agreement \(incorporated by reference to Exhibit 99.1 of the Registrant's report on Form 6-K furnished to the Commission on September 20, 2019\)](#)
- 4.3 [Form of Investor Warrant \(incorporated by reference to Exhibit 99.1 of the Registrant's report on Form 6-K furnished to the Commission on February 21, 2020\)](#)
- 4.4 [Form of Placement Agent Warrant \(incorporated by reference to Exhibit 99.4 of the Registrant's report on Form 6-K furnished to the Commission on February 21, 2020\)](#)

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- 4.5 [Form of Common Share Purchase Warrant \(incorporated by reference to Exhibit 4.5 of the Registrant's Registration Statement on Form F-1 filed with the Commission on June 30, 2020\)](#)
- 4.6 [Form of Pre-Funded Warrant \(incorporated by reference to Exhibit 4.6 of the Registrant's Registration Statement on Form F-1 filed with the Commission on June 30, 2020\)](#)
- 4.7 [Form of Placement Agent Warrant \(incorporated by reference to Exhibit 4.7 of the Registrant's Registration Statement Form F-1 filed with the Commission on June 30, 2020\)](#)
- 4.8 [Form of Investor Warrant \(incorporated by reference to Exhibit 99.1 of the Registrant's report on Form 6-K furnished to the Commission on August 5, 2020\)](#)
- 4.9 [Form of Placement Agent Warrant \(incorporated by reference to Exhibit 99.5 of the Registrant's report on Form 6-K furnished to the Commission on August 5, 2020\)](#)
- 4.10 [Form of Underwriter Warrant \(incorporated by reference to Exhibit 99.2 of the Registrant's report on Form 6-K furnished to the Commission on February 18, 2021\)](#)
- 5.1* [Opinion of Norton Rose Fulbright Canada LLP](#)
- 10.1 [Second Amended and Restated Stock Option Plan of the Registrant \(incorporated by reference to Exhibit 4.1 of the Registrant's Annual Report on Form 20-F for the financial year ended December 31, 2013 filed with the Commission on March 21, 2014\)](#)
- 10.2 [2018 Long-Term Incentive Plan of the Registrant \(incorporated by reference to Exhibit 4.7 of the Registrant's Form S-8 filed with the Commission on May 8, 2018\)](#)
- 10.3 [License and Assignment Agreement, dated January 16, 2018 by and between Aeterna Zentaris GmbH and Strongbridge Ireland Limited \(incorporated by reference to Exhibit 99.2 of the Registrant's report on Form 6-K furnished to the Commission on January 19, 2018\)](#)
- 10.4 [Independent Contractor Agreement dated September 18, 2018 between Leslie Auld and the Registrant \(incorporated by reference to Exhibit 4.8 of the Registrant's Annual Report on Form 20-F for the financial year ended December 31, 2018 filed with the Commission on April 1, 2019\)](#)
- 10.5± [Director and Officer Indemnification Agreement \(incorporated by reference to Exhibit 99.1 of the Registrant's report on Form 6-K furnished to the Commission on October 21, 2016\)](#)
- 10.6 [Placement Agency Agreement between the Registrant and Maxim Group LLC, dated as of September 20, 2019 \(incorporated by reference to Exhibit 99.2 of the Registrant's report on Form 6-K furnished to the Commission on September 20, 2019\)](#)
- 10.7 [Form of Securities Purchase Agreement by and between the Registrant and certain institutional investors, dated as of September 20, 2019 \(incorporated by reference to Exhibit 99.3 of the Registrant's report on Form 6-K furnished to the Commission on September 20, 2019\)](#)
- 10.8 [Amendment Agreement, dated November 16, 2020, by and between Aeterna Zentaris GmbH and Novo Nordisk Biopharm Limited \(incorporated by reference to Exhibit 99.1 of the Company's Report on Form 6-K furnished with the SEC on November 16, 2020\)](#)
- 10.9 [License Agreement, effective December 7, 2020, by and between Aeterna Zentaris GmbH and Consilient Health Ltd. \(incorporated by reference to Exhibit 99.1 of the Company's Report on Form 6-K furnished with the SEC on December 7, 2020\)](#)
- 10.10 [Engagement Letter dated February 14, 2021 between the Registrant and H.C. Wainwright & Co. \(incorporated by reference to Exhibit 4.17 of the Registrant's Annual Report on Form 20-F for the financial year ended December 31, 2021 filed with the Commission on March 29, 2022\)](#)
- 21.1 [Subsidiaries of the Registrant \(incorporated by reference to Exhibit 8.1 of the Registrant's Annual Report on Form 20-F for the financial year ended December 31, 2022 filed with the Commission on March 23, 2023\)](#)
- 23.1* [Consent of Norton Rose Fulbright Canada LLP \(included in Exhibit 5.1\)](#)
- 23.2 [Consent of Ernst & Young LLP](#)
- 23.3 [Consent of PricewaterhouseCoopers LLP](#)
- 24.1* [Power of Attorney](#)
- * Previously filed.
- ± Management contract or compensatory plan or arrangement.

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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 Post-Effective Amendment No. 4 to registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Charleston, South Carolina, on May 5, 2023.

AETERNA ZENTARIS INC.

By: /s/ Klaus Paulini, PhD

Name: Klaus Paulini, PhD

Title: President and Chief Executive Officer

SIGNATURES

Pursuant to the requirements of the Securities Act, this Post-Effective Amendment No. 4 to Registration Statement has been signed by the following persons in the capacities indicated below on May 5, 2023.

Signature	Title
<u>/s/ Klaus Paulini, PhD</u> Klaus Paulini, PhD	President, Chief Executive Officer (Principal Executive Officer) and Director
<u>/s/ Giuliano La Fratta</u> Giuliano La Fratta	Senior Vice President, Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)
* _____ Carolyn Egbert	Director and Chair of the Board
* _____ Peter G. Edwards	Director
* _____ Gilles Gagnon	Director
*By: <u>/s/ Klaus Paulini, PhD</u> Name: Klaus Paulini, PhD Title: Attorney-in-fact	

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AUTHORIZED REPRESENTATIVE

Pursuant to the requirements of Section 6(a) of the Securities Act of 1933, the undersigned has signed this Post-Effective Amendment No. 4 to Registration Statement on Form F-1, solely in the capacity of the duly authorized representative of Aeterna Zentaris Inc. in the United States, on May 5, 2023.

AETERNA ZENTARIS INC.

By: /s/ Klaus Paulini, PhD

Name: Klaus Paulini, PhD

Title: Authorized Signatory

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