Filed pursuant to 424(b)(5)
Registration No. 333-267801

PROSPECTUS SUPPLEMENT
(to Prospectus dated October 21, 2022)

$1,000,000

Aptose Biosciences Inc.

Common Shares

On February 3, 2025, we entered into a certain sales agreement (the "Sales Agreement") with A.G.P./Alliance Global Partners (the "A.G.P") relating to our common shares offered by this prospectus supplement. In accordance with the terms of the Sales Agreement, we may offer and sell our common shares have an aggregate offering price up to $1,000,000 from time to time through A.G.P., acting as our sales agent or principal.

Our common shares are listed on the Nasdaq Capital Market under the symbol "APTO" and on the Toronto Stock Exchange under the symbol "APS". On January 30, 2025, the closing price of our common shares on the Nasdaq Capital Market was $0.1691per common share and on the Toronto Stock Exchange was C$0.25 per common share. The Toronto Stock Exchange has accepted notice of the offering and we are relying on the exemption included in section 602.1 of the TSX Company Manual. Notwithstanding anything to the contrary, all sales and solicitations of sales of the common shares by A.G.P. pursuant to the Sales Agreement shall be made solely in the United States and no sales or solicitations of sales of the common shares by A.G.P. shall be done in Canada or through the facilities of the Toronto Stock Exchange.

Sales of our common shares, if any, under this prospectus supplement may be made in sales deemed to be "at the market offerings" as defined in Rule 415 promulgated under the Securities Act of 1933, as amended (the "Securities Act"). If authorized by us in writing, A.G.P. may also sell our common shares in negotiated transactions at market prices prevailing at the time of sale or at prices related to such prevailing market prices and/or in any other method permitted by law. If we and A.G.P. agree on any method of distribution other than sales of our common shares on or through the Nasdaq Capital Market or another existing trading market in the United States at market prices, we will file a further prospectus supplement providing all information about such offering as required by Rule 424(b) under the Securities Act. A.G.P. is not required to sell any specific number or dollar amount of securities but will act as a sales agent using commercially reasonable efforts consistent with its normal trading and sales practices, on mutually agreed terms between A.G.P. and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The compensation to A.G.P. for sales of common shares pursuant to the Sales Agreement will be equal to 3.0% of the gross proceeds of any common shares sold under the Sales Agreement, in addition to reimbursement of certain expenses, see "Plan of Distribution." In connection with the sale of the common shares on our behalf, A.G.P. will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of A.G.P. will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to A.G.P. with respect to certain liabilities, including liabilities under the Securities Act or the Securities Exchange Act of 1934, as amended, or the Exchange Act.

As of January 30, 2025, the aggregate market value of our outstanding common shares held bynon-affiliates was $10,142,408 based upon 60,181,183 common shares outstanding, of which 59,978,760 shares were held by non-affiliates, and the last reported sale price of our common shares of $0.1691 per share on January 30, 2025. Pursuant to General Instruction I.B.6. of Form S-3, in no event will we sell shares pursuant to this prospectus supplement having a value exceeding more than one-third of our public float in any 12-month period so long as our public float remains below $75,000,000. In the event that subsequent to the date of this prospectus supplement the aggregate market value of our outstanding common shares held by non-affiliates equals or exceeds $75,000,000, such one-third limitation on sales shall not apply to sales subsequently made pursuant to this prospectus supplement. Aptose has sold $57,510 of securities under General Instruction I.B.6. of Form S-3 in the past 12 months.

Our business and an investment in our common shares involve significant risks. See "Risk Factors" beginning on page S-21 of this prospectus supplement and page 2 of the accompanying prospectus to read about factors that you should consider before making an investment decision.

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

A.G.P.

The date of this prospectus supplement is February 3, 2025.

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ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3 (File No. 333-267801) that we filed with the SEC, as supplemented by a prospectus supplement dated October 21, 2022, that became effective on October 21, 2022. This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of the offering and also adds to and updates information contained in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus dated October 21, 2022, including the documents incorporated by reference, provides more general information. Generally, when we refer to this prospectus, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in the accompanying prospectus or in any document incorporated by reference that was filed with the Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in the accompanying prospectus—the statement in the document having the later date modifies or supersedes the earlier statement. You should read this prospectus supplement and the accompanying prospectus, including the information incorporated by reference and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision.

You should rely only on the information contained in or incorporated by reference in this prospectus supplement and the accompanying prospectus, along with the information contained in any free writing prospectus that we have authorized for use in connection with this offering. If the description of the offering varies between this prospectus supplement and the accompanying prospectus, you should rely on the information in this prospectus supplement. We have not, and A.G.P./Alliance Global Partners has not, authorized anyone to provide you with different or additional information. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, and in any free writing prospectus that we have authorized for use in connection with this offering is accurate only as of the respective dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference in this prospectus supplement or the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties and covenants were accurate only as of the date when made; therefore, such representations, warranties and covenants should not be relied on as accurate representations of the current state of our affairs.

Unless we have otherwise indicated or unless the context otherwise requires, all references in this prospectus supplement and the accompanying prospectus to “the Company,” “Aptose,” “we,” “us,” “our,” or similar references mean Aptose Biosciences Inc.

This prospectus supplement, the accompanying prospectus and the information incorporated by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus supplement or the accompanying prospectus are the property of their respective owners.

The complete mailing address and telephone number of our principal executive officers is:

Aptose Biosciences Inc.
66 Wellington Street West Suite 5300
TD Bank Tower Box 48
Toronto, Ontario M5K 1E6
(647) 479-9828

FORWARD-LOOKING STATEMENTS

This prospectus supplement, including the documents incorporated by reference herein, contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 and "forward-looking information" within the meaning of applicable Canadian securities law. We refer to such forward-looking statements and forward-looking information collectively as "forward-looking statements". These statements relate to future events or future performance and reflect our expectations and assumptions regarding our growth, results of operations, performance and business prospects and opportunities. Such forward-looking statements reflect our current beliefs and are based on information currently available to us. In some cases, forward-looking statements can be identified by terminology such as "may", "would", "could", "will", "should", "expect", "plan", "intend", "anticipate", "believe", "estimate", "predict", "potential", "continue" or the negative of these terms or other similar expressions concerning matters that are not historical facts. The forward-looking statements in this prospectus supplement and, including any documents incorporated by reference herein, include, among others, statements regarding our future operating results, economic performance and product development efforts and statements in respect of:

- our risk of imminent bankruptcy;
- we need to obtain substantial funding immediately in order to continue operations and our exploration of strategic alternatives;
- our compliance plans to address various notifications from Nasdaq and whether such compliance plans will be accepted by Nasdaq;
- our ability to continue as a going concern;
- our lack of product revenues;
- our early stage of development, particularly the inherent risks and uncertainties associated with (i) developing new drug candidates generally, (ii) demonstrating the safety and efficacy of these drug candidates in clinical studies in humans, and (iii) obtaining regulatory approval to commercialize these drug candidates;
- our need to raise substantial additional capital in the near future and that we may be unable to raise such funds when needed and on acceptable terms;
- further equity financing, which may substantially dilute the interests of our existing shareholders;
- clinical studies and regulatory approvals of our drug candidates are subject to delays, and may not be completed or granted on expected timetables, if at all, and such delays may increase our costs and could substantially harm our business;
- our reliance on external contract research/manufacturing organizations for certain activities and if we are subject to quality, cost, or delivery issues with the preclinical and clinical grade materials supplied by contract manufacturers, our business operations could suffer significant harm;
- clinical studies are long, expensive and uncertain processes and the United States Food and Drug Administration, or "FDA", or other similar foreign regulatory agencies that we are required to report to, may ultimately not approve any of our product candidates;
- our ability to comply with applicable regulations and standards;
- our inability to achieve our projected development goals in the time frames we announce and expect;
- difficulties in enrolling patients for clinical trials may lead to delays or cancellations of our clinical trials;
- our reliance on third parties to conduct and monitor our preclinical studies;
- our ability to attract and retain key personnel, including key executives and scientists;

- any misconduct or improper activities by our employees;
- our exposure to exchange rate risk;
- our ability to commercialize our business attributed to negative results from clinical trials;
- the marketplace may not accept our products or product candidates due to the intense competition and technological change in the biotechnical and pharmaceuticals, and we may not be able to compete successfully against other companies in our industries and achieve profitability;
- our ability to obtain and maintain patent protection;
- our ability to afford substantial costs incurred with defending our intellectual property;
- our ability to protect our intellectual property rights and not infringe on the intellectual property rights of others;
- our business is subject to potential product liability and other claims;
- potential exposure to legal actions and the potential need to take action against other entities;
- commercialization limitations imposed by intellectual property rights owned or controlled by third parties;
- our ability to maintain adequate insurance at acceptable costs;
- our ability to find and enter into agreements with potential partners;
- extensive government regulation;
- data security incidents and privacy breaches could result in increased costs and reputational harm;
- our common share price has been and is likely to continue to be volatile;
- future sales of our common shares by us or by our existing shareholders could cause our common share price to drop;
- changing global market and financial conditions;
- changes in an active trading market in our common shares;
- difficulties by non-Canadian investors to obtain and enforce judgments against us because of our Canadian incorporation and presence;
- our “smaller reporting company” status;
- any failures to maintain an effective system of internal controls may result in material misstatements of our financial statements, or cause us to fail to meet our reporting obligations or fail to prevent fraud;
- our broad discretion in how we use the proceeds of the sale of common shares;
- our ability to expand our business through the acquisition of companies or businesses; and
- other risks detailed from time-to-time in our on-going filings with the SEC and Canadian securities regulators, and those which are discussed under the heading “Risk Factors” in this prospectus supplement and in the documents incorporated by reference

Should one or more of these risks or uncertainties materialize, or should the assumptions described in the sections entitled “Risk Factors” in this prospectus supplement and in the documents incorporated by reference underlying those forward-looking statements prove incorrect, actual results may vary materially from those described in the forward-looking statements.

More detailed information about these and other factors is included in this prospectus supplement under the section entitled “Risk Factors” and in the documents incorporated by reference into this prospectus supplement. Although we have attempted to identify factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Forward-looking statements are based upon our beliefs, estimates and opinions at the time they are made and we undertake no obligation to update forward-looking statements if these beliefs, estimates and opinions or circumstances should change, except as required by applicable law. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements.

Forward-looking statements contained in this prospectus supplement are made as of the date of this prospectus supplement. Forward-looking statements made in a document incorporated by reference into this prospectus supplement are made as of the date of the original document and have not been updated by us except as expressly provided for in this prospectus supplement.

We qualify all the forward-looking statements contained in this prospectus supplement and the documents incorporated by reference in this prospectus supplement by the foregoing cautionary statements.

ENFORCEABILITY OF CIVIL LIABILITIES

We are incorporated under the laws of Canada. Many of our directors and officers and the experts named in this prospectus supplement are residents of countries other than the United States, and all or a substantial portion of their assets and some of our assets are located outside the United States. We have appointed Aptose Biosciences U.S. Inc. as our agent for service of process in the United States, but it may be difficult for holders of securities who reside in the United States to effect service within the United States upon those directors, officers and experts who are not residents of the United States. Additionally, it may not be possible for you to enforce judgments obtained in U.S. courts based upon the civil liability provisions of the U.S. federal securities laws or other laws of the United States. In addition, there is doubt as to whether an original action could be brought in Canada against us or our directors or officers based solely upon U.S. federal or state securities laws and as to the enforceability in Canadian courts of judgments of U.S. courts obtained in actions based upon the civil liability provisions of U.S. federal or state securities laws.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information about us, this offering and information contained in greater detail elsewhere in this prospectus supplement, the accompanying prospectus, any free writing prospectus that we have authorized for use, and in the documents incorporated by reference. This summary is not complete and does not contain all of the information that you should consider before investing in the securities. You should carefully read and consider this entire prospectus supplement, the accompanying prospectus and the documents incorporated by reference into this prospectus supplement, including financial statements and related notes, and "Risk Factors" starting on page S-21 of this prospectus supplement, before making an investment decision. If you invest in our securities, you are assuming a high degree of risk.

Aptose Biosciences Inc.

Our Business

Aptose Biosciences Inc. ("Aptose," the "Company," "we," "us," or "our") is a science-driven clinical stage biotechnology company committed to the development and commercialization of precision medicines addressing unmet clinical needs in oncology, with an initial focus on hematology. The Company's small molecule cancer therapeutics pipeline includes products designed to provide single agent efficacy and to enhance the efficacy of other anti-cancer therapies and regimens without overlapping toxicities. The Company's executive offices are located in San Diego, California, and our head office is located in Toronto, Canada.

Tuspetinib, ("Tuspetinib" or "TUS"), Aptose's lead program, is being developed for frontline combination therapy in newly diagnosed acute myeloid leukemia ("AML") patients to unlock the most significant patient impact and greatest commercial opportunity. AML is a highly aggressive cancer of the bone marrow and blood, and there is a tremendous unmet need for a therapy that can extend survival of newly diagnosed AML patients and improve their quality of life. Newly diagnosed AML patients typically fail all frontline (1L) therapies, and responses to subsequent salvage therapies in the relapsed or refractory (R/R) setting are limited, highlighting the need for a more effective triple drug ("triplet") combination therapy to increase survival in the frontline setting.

Current standard of care treatment in the 1L setting for many newly diagnosed AML patients includes a doublet combination of venetoclax and a hypomethylating agent (VEN+HMA). Exploratory triplet therapies using current agents added to VEN+HMA have achieved notable response rates but are compromised because of toxicities and the limited activity across subpopulations of AML patients. In contrast, tuspetinib is a convenient, orally administered, once-daily kinase inhibitor that targets select kinases operative in AML and exerts broad activity across AML populations with adverse genetics. However, tuspetinib avoids kinases that typically cause toxicities associated with other kinase inhibitors and has demonstrated an excellent safety profile. These properties position tuspetinib as an ideal agent for addition to the VEN+HMA backbone therapy to create a superior triplet (TUS+VEN+HMA) frontline therapy to treat newly diagnosed AML.

Aptose is currently conducting a Phase 1/2 clinical trial to develop Tuspetinib in the TUS+VEN+HMA triplet drug combinations in newly diagnosed AML patients, and once the study enrolls, we expect to deliver important clinical data (CR and MRD negativity rates, safety, and survival) over the following 6 to 12 months. It was essential to understand the safety, tolerability, and response activities of tuspetinib as a single agent and as the TUS+VEN doublet combination before advancing to the TUS+VEN+HMA triplet. We therefore performed a clinical trial of TUS single agent in patients with relapsed or refractory (R/R) AML and then performed a trial with the TUS+VEN doublet therapy in R/R AML patients and now have advanced the TUS+VEN+HMA frontline therapy into newly diagnosed AML patients. See Note 2(a) and Item 1A—Risk Factors. To be precise, we have now completed a dose escalation and dose exploration international Phase 1/2 clinical trial to assess the safety, tolerability, pharmacokinetics, pharmacodynamic responses, and efficacy of TUS single agent in patients

with R/R AML. Significant bone marrow blast reductions and clinical responses without dose limiting toxicities were achieved at four dose levels across a broad diversity of mutationally-defined AML populations and with a highly favorable safety profile. Tuspetinib to date has demonstrated a favorable safety profile and has caused no drug-related QTc prolongations, liver or kidney toxicities, muscle damage, or differentiation syndrome, and no myelosuppression with continuous dosing of patients in remission. At a dose of 80 mg, tuspetinib demonstrated notable response rates in R/R AML patients that had never been treated with venetoclax (VEN-naive AML): CR/CRh=36% among all-comers, CR/CRh=50% among patients with mutated FLT3, and CR/CRh=25% in patients with wildtype FLT3.

Following completion of the single agent dose escalation and exploration trial, tuspetinib advanced into the APTIVATE expansion trial of the Phase 1/2 program to evaluate the TUS+VEN doublet in R/R AML patient populations. The TUS+VEN doublet combination therapy maintained a favorable safety profile: no new or unexpected safety signals were observed, and there were no reported drug-related adverse events of QTc prolongation, differentiation syndrome, or deaths. The TUS+VEN doublet combination also achieved significant bone marrow reductions and clinical responses in heavily pretreated R/R AML patients, including those with mutated TP53, mutated NKRAS, wildtype or mutated FLT3, and those who failed prior therapy with venetoclax ("Prior-VEN") or FLT3 inhibitors ("Prior-FLT3i").

Collectively, the clinical safety and efficacy data with TUS single agent and TUS+VEN doublet in R/R AML patients position tuspetinib for development as the TUS+VEN+HMA triplet in newly diagnosed AML patients. Newly diagnosed AML patients are VEN-naïve, FLT3i-naïve, and HMA-naïve—this patient population is expected to be highly responsive to a tuspetinib-containing triplet therapy. Based on the safety and efficacy profile of tuspetinib, we believe that tuspetinib as part of the TUS+VEN+HMA triplet, if approved, could establish a new standard of care therapy for newly diagnosed patients with mutated or unmutated FLT3 and in patients with other adverse genetic abnormalities. These beliefs related to the potential patient treatment and commercial opportunities are based on management's current assumptions and estimates, which are subject to change, and there can be no assurance that tuspetinib will ever be approved or successfully commercialized and, if approved and commercialized, that it will ever generate significant revenues. See our "Risk Factors—"We are an early-stage development company with no revenues from product sales." and "We have a history of operating losses. We expect to incur net losses and we may never achieve or maintain profitability." in our Annual Report on Form 10-K filed with the SEC on March 26, 2024, incorporated by reference in this prospectus.

Luxeptinib ("LUX") is an orally administered, highly potent kinase inhibitor that selectively targets defined clusters of kinases that are operative in hematologic malignancies. LUX has demonstrated clinical activity in R/R AML and in R/R B-cell cancer patients but was not consistently achieving the desired exposure levels to drive responses. Absorption of the original G1 formulation hindered the effectiveness of luxeptinib, so a new G3 formulation was developed. Clinical evaluation of the G3 formulation has been completed in a single dose bioavailability study across five dose levels and then with continuous dosing using two different dose levels. The G3 formulation achieved our desired plasma exposure benchmark, with approximately 10-fold better absorption, and better tolerability than the original formulation. We are seeking alternative development paths and collaborations for LUX. Given current funding and our prioritization of tuspetinib, we have decided to pause funding the development of luxeptinib.

Tuspetinib

Indication and Clinical Trials:

Tuspetinib is an oral, highly potent, small molecule inhibitor of kinases operative in myeloid malignancies and known to be involved in tumor proliferation, resistance to therapy and differentiation. Preclinical in vitro and in vivo studies suggest that Tuspetinib may be an effective monotherapy and combination therapy in patients with

hematologic malignancies including AML. A U.S. based Phase 1/2 clinical trial with the TUS+VEN+HMA triplet drug combinations in newly diagnosed AML patients is currently being conducted. An international Phase 1/2 clinical trial in patients with relapsed or refractory AML, in which patients received either TUS single agent or the TUS+VEN doublet, has been completed. That study delivered evidence of robust clinical activity, including multiple complete responses in R/R AML patients with various disease genotypes, and no toxicity trends that prevented advancement of TUS into the TUS+VEN+AZA triplet clinical study.

The FDA granted orphan drug designation to tuspetinib for the treatment of patients with AML in October 2018. Orphan drug designation is granted by the FDA to encourage companies to develop therapies for the treatment of diseases that affect fewer than 200,000 individuals in the United States. Orphan drug status provides research and development tax credits, an opportunity to obtain grant funding, exemption from FDA application fees and other benefits. The orphan drug designation also provides us with seven additional years of marketing exclusivity in this indication.

On December 3, 2024, the Company announced that the National Cancer Institute (NCI), part of the National Institutes of Health, and Aptose Biosciences Inc. have entered into a Cooperative Research and Development Agreement ("CRADA"). Under the CRADA, the NCI and Aptose will collaborate on the clinical development of Aptose's proprietary lead clinical-stage compound tuspetinib (TUS), an inhibitor of key signaling kinases involved in myeloid malignancies, in the NCI Cancer Therapy Evaluation Program (CTEP) sponsored myeloMATCH trials employing combinations of targeted therapy for the treatment of molecularly defined acute myeloid leukemia (AML) and myelodysplastic syndromes (MDS) populations. These trials will be conducted by NCI's National Clinical Trials Network (NCTN), with the participation of the NCI Community Oncology Research Program (NCORP) in the U.S. and Canada.

The myeloMATCH precision medicine trials (NCT05564390), funded by the NCI, were officially launched on May 16, 2024. myeloMATCH aims to expedite the development of tailored drug combination treatments for patients with newly diagnosed AML and MDS and to treat patients with these aggressive cancers of the blood and bone marrow from diagnosis throughout their treatment journey.

Manufacturing:

Following the Tuspetinib licensing agreement between Aptose and Hanmi on November 4, 2021 (the "Tuspetinib Licensing Agreement"), Aptose received from Hanmi an existing inventory of drug product expected to support continuation of the current Phase 1/2 study. The Company and Hanmi also entered into a separate supply agreement in 2022 for additional production of new drug substance and drug product to support further clinical development. Additional batches of API and drug product have been produced by other companies during 2022 and 2023.

Program Updates at Recent Scientific Forums:

Aptose plans to initiate the tuspetinib + venetoclax + azacitidine (TUS+VEN+AZA) triple drug combination study in newly diagnosed AML patients with 40 mg tuspetinib and then to dose escalate the tuspetinib dose to 80 mg. Safety and activity as a single agent were demonstrated with the 40 mg dose of tuspetinib in R/R AML patients. This 40 mg dose represents one dose level below the 80 mg single agent recommended phase 2 dose (RP2D) of tuspetinib in R/R AML patients, this dose escalation approach which is the typical FDA recommended starting dose for drug combination studies.

In December 2024, Aptose attended the 66th Annual American Society of Hematology (ASH) Meeting and Exposition in San Diego, California, and presented a poster entitled "Phase 1 Safety and Efficacy of Tuspetinib Plus Venetoclax Combination Therapy in Study Participants with Relapsed or Refractory Acute Myeloid Leukemia (AML) Support Exploration of Triplet Combination Therapy of Tuspetinib Plus Venetoclax and Azacitidine for Newly Diagnosed AML".

Key Findings and Messages included:

- TUS+VEN+AZA triplet trial is proceeding in newly diagnosed AML patients
- TUS+VEN retains activity in the difficult-to-treat prior-VEN AML population
- TUS+VEN is active in FLT3 wildtype, representing ~70% of AML patients
- TUS+VEN is well tolerated and can be safely co-administered
- TUS+VEN is active across broad populations of R/R AML
- Combination of TUS with VEN may avoid VEN resistance
- TUS+VEN+AZA triplet may establish a more effective, mutation agnostic standard of
- care for chemotherapy ineligible AML patients

Highlights of the ASH poster presentation included

TUS as Single Agent (n= 93 Patients)

- 60% and 42% CR/CRh with 80 mg TUS in FLT3 mutated and all-comer VEN-naïve AML
- 33% CRc & 42% ORR (CR, CRp, CRh, CRi or PR) in FLT3 mutated and VEN-naïve patients
  - Includes 40, 80, 120, and 160 mg TUS dose as a single agent
  - Includes those who failed prior therapy with venetoclax
  - Includes those with mutated or unmutated FLT3, those who failed prior-HSCT, prior FLT3i, prior-chemotherapy, prior-HMA
  - TUS once daily orally as a single agent achieved CR/CRh responses at four different dose levels (40, 80, 120, and 160 mg) with no dose limiting toxicities (no DLTs)
  - TUS showed a favorable safety profile with no DLTs through 160 mg per day, and no drug related discontinuations, no QTc, no differentiation syndrome, and no deaths

TUS/VEN Combination Therapy (n= 79 Patients)

- 40% ORR with 80 mg TUS + 400 mg VEN in FLT3 mutated patients
- 83% (5/6) had failed prior-VEN treatment and 50% (3/6) had failed both prior-VEN and FLT3i treatment
- TUS+VEN achieved responses among diverse R/R AML with adverse mutations in VEN-naïve, prior-VEN, FLT3WT, FLT3MUT, prior-FLT3
- TUS+VEN showed favorable safety and tolerability with no new or unexpected safety

On June 14, 2024, Aptose presented tuspetinib (TUS) clinical findings as a clinical poster presentation and preclinical findings as ae-poster at the European Hematology Association (EHA) 2024 Hybrid Congress in Madrid, Spain. Highlights of the findings include:

- Tuspetinib Monotherapy (TUS) and Tuspetinib + Venetoclax (TUS+VEN) Doublet Therapy Show Broad Clinical Activity and Strong Safety Data in relapsed or refractory (R/R) Acute Myeloid Leukemia (AML) and Differentiate TUS from other Investigational Drugs in AML
- TUS Monotherapy and TUS+VEN Doublet Therapy Active in Difficult-to-treat Genetic Subgroups, FLT3 Wildtype AML

- TUS Shown to Target VEN Resistance Mechanisms and Retain Activity on VEN-Resistant AML Cells in Preclinical Study
- Tuspetinib + Venetoclax + Azacitidine (TUS+VEN+AZA) Triplet Trial to Treat Newly Diagnosed AML Patients; Clinical Sites Being Activated

Our APTIVATE clinical trial of Tuspetinib as a monotherapy (TUS) and in combination treatment with Venetoclax (TUS+VEN) in a very ill AML patient population, yielded excellent and consistent safety findings and demonstrated clinical activity across a broad range of AML—including many with highly adverse genetic mutations. These findings supported advancement of Tuspetinib as an ideal third agent to add to a venetoclax and hypomethylating agent regimen for the frontline treatment of Newly Diagnosed AML patients. Conclusions from the clinical poster, entitled "Safety and Efficacy of Tuspetinib as Monotherapy and Combined with Venetoclax in a Phase 1/2 Trial of Patients with Relapsed or Refractory (R/R) Acute Myeloid Leukemia" include:

- Extensive dose exploration was performed with TUS (93 patients) and TUS+VEN (79 patients) in highly treatment experienced R/R AML patients (prior VEN, FLT3i, HMA, chemotherapy, HSCT)
- TUS monotherapy achieved complete remissions at 40, 80, 120, and 160 mg with no DLT, achieved a 42% CRc and 50% ORR in VEN naïve and FLT3-mutation harboring patients, and achieved responses in patients harboring highly adverse genetics (TP53MUT, RASMUT, other)
- TUS+VEN Doublet remained safe and well tolerated (40mg TUS + 400mg VEN | 80mg TUS + 400mg VEN), and achieved bone marrow blast reductions and responses among diverse R/R AML patients with adverse mutations and prior failure of VEN
- TUS targets known VEN resistance mechanisms in vitro and is clinically active in both FLT3MUT & FLT3WT R/R AML populations even after prior VEN exposure.

The greatest unmet medical need in AML is for an improved frontline therapy in Newly Diagnosed AML patients. Tuspetinib is now being developed as the TUS+VEN+HMA to establish a new standard of care for the treatment of these Newly Diagnosed AML patients that may increase response rates, extend survival, safely improve quality of life, treat a broad spectrum of genetically unique AML patient populations, and blunt the development of resistance to Venetoclax.

- Progress has been made with VEN+HMA in 1L therapy but 1/3 do not respond and median OS <15 months with <25% alive at 3-years.
- Response rates and OS need improvement, especially in adverse genetic subgroups
- Emergence of VEN resistance via RAS/MAPK, TP53, and FLT3 clonal expansion, among other mechanisms, leads to relapse or refractory (R/R) AML that does not respond well to subsequent salvage therapies in R/R setting.
- A 3rd agent is needed to boost responses with VEN+HMA standard of care therapy.
- We believe Tuspetinib is the ideal 3rd Agent for Addition to VEN+AZA to Treat Newly Diagnosed AML
- TUS has excellent safety alone and in combination with VEN whenco-administered
- TUS has broad activity across genetic subgroups including TP53, RAS/MAPK, & FLT3 mutants
- TUS mechanism may minimize drug resistance to VEN via inhibition of key AML kinases
- TUS can be administered with or without food allowingco-administration with VEN
- Preliminary PK data suggest no clinically meaningful interaction between TUS and VEN requiring dose modification for co-administration.

In addition to the Tuspetinib clinical poster, a separate preclinical abstract was published as an e-poster publication at EHA, entitled "Tuspetinib Retains Nanomolar Potency Against AML Cells Engineered to Express the NRAS G12D Mutation or Selected for Resistance to Venetoclax'. The study demonstrated that TUS targets known venetoclax (VEN) resistance mechanisms, retaining nanomolar potency against AML cells engineered to express the NRAS-G12D mutation or selected for resistance to VEN, and in combination with VEN, could prevent emergence of resistance to both agents. TUS resistant cells showed hypersensitivity to VEN such that treatment with both drugs could also interfere with the emergence of TUS resistance.

On March 26, 2024, Aptose announced that more than 170 patients to date received TUS alone or in combination with the BCL-2 inhibitor venetoclax (VEN) during the Phase 1/2 clinical program in the very ill relapsed or refractory (R/R) AML patient population. At the single agent 80 mg dose, TUS achieved a favorable safety profile and an impressive response rate among patients who were naive to VEN. The safety profile of TUS remained favorable when TUS was combined with VEN in R/R AML patients, and responses were achieved in both patients naive to VEN and those who failed prior therapy with VEN. TUS avoids many typical toxicities observed with other agents and achieves broad activity across AML patients with a diversity of adverse genetic abnormalities.

On December 9, 2023, Aptose featured tuspetinib in an oral presentation at the 65th American Society of Hematology (ASH) Annual Meeting and Exposition and announced that a growing body of clinical data for Aptose's lead compound tuspetinib, demonstrates significant benefit as a single agent and in combination with venetoclax in patients with R/R AML in the ongoing APTIVATE Phase 1/2 study. Data were presented in an oral presentation by lead investigator Naval G. Daver, M.D., Professor, Director Leukemia Research Alliance Program, Department of Leukemia, The University of Texas MD Anderson Cancer Center, Houston, TX.

Dr. Daver reported data from more than 100 relapsed/refractory patients from multiple international clinical sites, who had failed prior therapy and then were treated with TUS as a single agent or TUS+VEN. Both TUS and TUS+VEN delivered multiple composite complete remissions (CRc) in this very ill AML population, while maintaining a favorable safety profile across all treated patients. The data demonstrated tuspetinib is active and well tolerated in one of the most challenging and heterogeneous disease settings in oncology – relapsed and refractory AML. Tuspetinib demonstrated broad activity, including activity in patients with FLT3 wild-type AML (accounting for more than 70% of the AML population), FLT3 mutated AML, NPM1 mutated AML, as well as in patients with mutations historically associated with resistance to targeted therapy. Most notably, TUS targets VEN resistance mechanisms, enabling TUS+VEN uniquely to treat the very ill prior-VEN AML population, including both FLT3 mutant and FLT3 wildtype disease. From a broader perspective, the growing body of antileukemic activity, and continued favorable safety profile, support advancement of tuspetinib in a TUS+VEN+HMA triplet for the treatment of frontline newly diagnosed AML patients."

Dr. Daver also pointed out that while patients on the TUS+VEN therapy are early in their treatment cycles, most achieving a response remained on treatment and that responses have begun to mature as dosing continues. Highlights of Dr. Daver's ASH oral presentation include:

- As a single agent at therapeutic doses of 80-160 mg in 68 evaluable patients, TUS was more active in VEN-naive patients, with an overall CRc rate of 29% (8/28). This included a 42% CRc rate (5/12) in FLT3-mutated patients and a 19% CRc rate (3/16) in FLT3-unmutated, or wildtype, AML patients. Responses and blood counts improved with continuous dosing, many patients bridged to an allogeneic stem cell transplant ("HSCT"), durability was observed when HSCT was not performed, and 80 mg was selected as the RP2D. Overall, tuspetinib showed a favorable safety profile with only mild adverse events ("AEs") and no dose-limiting toxicities ("DLTs") up to 160 mg per day, and no drug discontinuations from drug-related toxicity.

- In the TUS+VEN doublet study, 49 patients were dosed with 80 mg of tuspetinib and 200 mg of venetoclax, with 36 evaluable (and 13 patients too early to assess). Patients were heavily exposed to Prior-VEN and Prior-FLT3 inhibitor treatment. TUS+VEN was active in both VEN-naive and prior Prior-VEN R/R AML patients. TUS demonstrated compelling composite complete remission (CRc) rates. Among all evaluable patients, TUS+VEN demonstrated a CRc rate of 25% (9/36); 43% (3/7) in VEN-naive patients, and 21% (6/29) in Prior-VEN patients. Among FLT3 wildtype patients, TUS+VEN demonstrated an overall CRc rate of 20% (5/25); 33% (2/6) in VEN-naive patients, and 16% (3/19) in Prior-VEN patients. Among FLT3 mutant patients, TUS+VEN demonstrated an overall CRc rate of 36% (4/11); a complete response in a VEN-naive patient (1/1); a 30% (3/10) in Prior-VEN patients; and 44% (4/9) in patients treated prior with a FLT3 inhibitor.

On October 29, 2023, Aptose presented two posters related to the clinical and preclinical activity of tuspetinib at the European School of Haematology 6th International Conference: Acute Myeloid Leukemia "Molecular and Translational": Advances in Biology and Treatment, held October 29-31, 2023, in Estoril, Portugal. Clinical findings included 1) data from the APTO-TUS-HV01 clinical trial (the "Food Effect Study") evaluating the pharmacokinetic (PK) properties of tuspetinib in healthy human volunteers in which tuspetinib was administered with or without food, and 2) from an international Phase 1/2 study of tuspetinib as a single agent (TUS) and in combination with venetoclax in patients with R/R AML from across clinical centers in the United States, South Korea, Spain, Australia and other sites. Data from the Food Effect Study in healthy human volunteers demonstrated tuspetinib can be administered with or without food and foresee no clinically meaningful difference in exposure. This is an important finding for patient convenience, as venetoclax is dosed with food and tuspetinib can now be co-administered with venetoclax rather than in staggered dosing. Findings from the Phase 1/2 clinical trial demonstrated tuspetinib as a single agent was well-tolerated and highly active among R/R AML patients with a diversity of adverse genotypes and delivered a 42% CR/CRh cross-evaluable venetoclax (VEN) naive patients at the 80mg daily RP2D. The TUS+VEN doublet has been well tolerated in the APTIVATE international Phase 1/2 expansion trial in R/R AML patients and achieved multiple responses in patients who previously failed venetoclax ("Prior-VEN failure AML"), including Prior-VEN failure patients who also previously failed FLT3 inhibitors, all of whom represent emerging populations of high unmet medical need. Notably, tuspetinib targets venetoclax resistance mechanisms that may re-sensitize Prior-VEN failure patients to venetoclax.

Separate from the clinical studies, the preclinical study (entitled: "Tuspetinib Oral Myeloid Kinase Inhibitor Creates Synthetic Lethal Vulnerability to Venetoclax") presented by Aptose during the ESH Conference investigated the effects of tuspetinib on key elements of the phosphokinome and apoptotic proteome in both parental and TUS-resistant AML cells. In parental cells, tuspetinib inhibits key oncogenic signaling pathways and shifts the balance of pro- and anti-apoptotic proteins in favor of apoptosis, suggesting that it may generate vulnerability to venetoclax. In addition, acquired resistance in the AML cells to tuspetinib generated a synthetic lethal vulnerability to venetoclax of unusually high magnitude. Concurrent administration of TUS+VEN, therefore, may discourage the emergence of resistance to tuspetinib during treatment.

In conjunction with poster presentations at the ESH Conference, on October 30, 2023, Aptose held a "Clinical Update and KOL Data Review of AML Drug Tuspetinib" that was webcast and featured Dr. Naval Daver, MD, Professor, Director Leukemia Research Alliance Program, Department of Leukemia, The University of Texas MD Anderson Cancer Center, Houston, Texas. Dr. Daver is the lead investigator on Aptose's APTIVATE trial and is recognized for significant achievements in the development of novel AML treatments, including several combination therapies. Aptose presented data in 49 patients who received the TUS+VEN doublet, showing an overall response rate ("ORR") of 48% among all patients that had achieved an evaluable stage, as well as a 44% ORR among Prior-VEN failure AML patients, including FLT3-unmutated ("wildtype") patients (43% ORR) and FLT3-mutated patients (60% ORR), some of whom also had failed prior therapy with FLT3 inhibitors. The TUS+VEN doublet was well tolerated with no unexpected safety signals. The TUS+VEN doublet may serve the Prior-VEN failure R/R AML patients that represent a rapidly growing population that is highly refractory to any

salvage therapy. The compelling data with the TUS+VEN doublet in R/R AML patients suggest a TUS+VEN+HMA triplet may also serve the needs of frontline (1L) newly diagnosed AML patients.

Concurrent with the European Hematology Association (EHA) Annual Congress held June 8-11, 2023, Aptose held an interim clinical update webcast on June 10, 2023, to present highlights from the ongoing clinical development of tuspetinib. Aptose reported completion of the tuspetinib dose escalation and dose exploration Phase 1/2 trial in 77 R/R AML patients, tuspetinib demonstrated a favorable safety profile, and tuspetinib delivered monotherapy responses across four dose levels with no dose-limiting toxicity in mutationally diverse and difficult to treat R/R AML populations, including patients with highly adverse mutations that typically do not respond to monotherapy or combination therapy: TP53-mutated patients with a CR/CRh = 20% and RAS-mutated patients with a CR/CRh = 22%. Aptose also reported completion of a successful End of Phase 1 Meeting with the US FDA for tuspetinib, that a monotherapy RP2D was selected as 80mg daily, and that all development paths remain open, including the single arm accelerated path. Following completion of the dose escalation and dose exploration phases of the Phase 1/2 clinical program, Aptose focused attention on the tuspetinib APTIVATE expansion trial. The APTIVATE trial is designed to identify patient populations sensitive to tuspetinib monotherapy that may serve as development paths for single arm accelerated approval and to use the TUS+VEN doublet in R/R AML patients and identify patient populations of unmet need that are sensitive to the TUS+VEN doublet and can serve as development paths for accelerated and full approvals. We reported that patient enrollment in the APTIVATE expansion trial has been brisk and preliminary CR activity had already been reported in patients receiving the TUS+VEN doublet who previously failed therapy with venetoclax. During the interim clinical update webcast Aptose also reviewed clinical findings with the new G3 formulation of luxeptinib. Aptose disclosed that continuous dosing with 50mg of the G3 formulation achieves roughly an equivalent pharmacokinetic profile as 900mg original G1 formulation, and that dose escalation with the G3 formulation was anticipated.

On March 23, 2023, Aptose announced the APTIVATE Phase 1/2 expansion trial with tuspetinib had been initiated and already had treated several R/R AML patients in the monotherapy arm, and that patient enrollment had been initiated in the doublet combination treatment arm of the APTIVATE trial with the TUS+VEN doublet. Since then, patients have continued to enroll and receive tuspetinib on the monotherapy arm. Plus, enrollment and dosing of patients on the TUS+VEN doublet arm have been brisk. Clinical investigator interest for tuspetinib is evident, and early signs of antileukemic activity during the APTIVATE trial have fueled the level of excitement for the trial.

Clinical responses to monotherapy with tuspetinib have been observed in a broad range of mutationally defined populations, including those with mutated forms of NPM1, MLL, TP53, DNMT3A, RUNX1, wild-type FLT3, ITD or TKD mutated FLT3, various splicing factors, and other genes. In the March 23, 2023, announcement, Aptose also highlighted an unexpected observation of a 29% CR/CRh response rate with tuspetinib monotherapy in R/R AML patients having mutations in the RAS gene or other genes in the RAS pathway. Responses in RAS-mutated patients are important because the RAS pathway is often mutated in response to therapy by other agents as the AML cells mutate toward resistance to those other agents. Collectively, these observations of broad clinical activity of tuspetinib, along with its favorable safety profile, position tuspetinib for potential accelerated development paths, as well as for doublet, triplet and maintenance therapy indications.

On January 30, 2023, Aptose announced dosing of patients in the APTIVATE Phase 1/2 clinical trial of tuspetinib, and that another clinical response has been achieved by a R/R AML patient receiving 40 mg tuspetinib once daily orally in the original dose medical need. Notably, tuspetinib targets venetoclax resistance mechanisms that may re-sensitize Prior-VEN failure patients to venetoclax.

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Luxeptinib

Given current funding and our prioritization of tuspetinib, we have decided to pause funding the development of luxeptinib. For further information about the historical development of Luxeptinib, please refer to the Company's Annual Report on Form 10-K for the year ended December 31, 2023.

Indication and Clinical Trials:

Luxeptinib is an oral, highly potent kinase inhibitor that selectively targets defined kinases operative in myeloid and lymphoid hematologic malignancies. This small molecule has been evaluated in a Phase 1a/b study for the treatment of patients having R/R B-cell leukemias and lymphomas and in a Phase 1a/b study for the treatment of patients with R/R AML or hr-MDS. These clinical studies demonstrated tumor shrinkage among B-cell cancer patients, including a CR in a diffuse large B-cell lymphoma patient that was determined via biopsy analysis at the end of Cycle 22 with 900mg BID dosing of the original G1 formulation. Likewise, an MRD-negative CR in one R/R AML patient occurred with 450mg BID dosing of the original G1 formulation. Because absorption of the original G1 formulation hampered effectiveness of luxeptinib, a new G3 formulation was developed. Enrollment of patients in the B-cell malignancy trial and the AML trial have been completed, and clinical evaluation of the G3 formulation has been completed. The G3 formulation was determined to deliver superior plasma exposure levels relative to the original G1 formulation, and any future trial with luxeptinib should use the G3 formulation. Regarding potential next steps with luxeptinib, recent therapeutic strategies with CLL B-cell cancer patients typically involve therapy with certain BTK inhibitors in combination with venetoclax (VEN). Drug resistance has begun to emerge in a molecularly defined subgroup of these patients, and the drug resistance has been correlated with mutations in the FLT3 receptor. Although FLT3 mutations are typically associated with AML patients, these R/R CLL prior-BTKi/Prior-VEN/FLT3-mutated patients are difficult to treat and represent a potential commercial market of approximately $200 million by 2039. The Dana Farber Cancer Institute identified this emerging patient population and has requested luxeptinib be tested as part of an investigator sponsored trial in combination with VEN in the R/R CLL prior-BTKi/Prior-VEN/FLT3-mutated patients. Non-clinical studies are underway to position LUX+VEN for the treatment of these patients, and efforts are underway to identify sources of capital to support such a trial to develop LUX for a molecularly defined CLL subpopulation with a high unmet medical need.

During the fourth quarter of 2022, we completed dosing of the first, second, third, fourth, fifth, and sixth dose levels (150 mg, 300 mg, 450 mg, 600 mg, 750 mg, and 900 mg BID, respectively) of the original G1 formulation in the Phase 1 a/b trial in patients with B-cell leukemias and lymphomas. Among enrolled patients at that time with an array of B-cell malignancies, we had observed inhibition of phospho-BTK and "on-target" lymphocytosis in patients with classic CLL and modest tumor reductions in patients with different tumor types, indicating target engagement and pharmacologic activity of luxeptinib. During the ASH Annual Meeting in December 2022, we announced that a CR was achieved with a diffuse large B-cell lymphoma patient at the 900 mg dose level of the original G1 formulation, demonstrating luxeptinib is active in certainB-cell malignancies.

As part of the ongoing dose escalation of the current formulation of luxeptinib in patients withB-cell malignancies and AML, Aptose has made significant progress in the development of a G3 formulation that could reduce total API administered, reduce pill burden, improve absorption, and increase exposure. Aptose began testing this new G3 formulation of luxeptinib as a single dose with 72-hour pharmacokinetics ("PK") analysis in the ongoing studies in patients with hematologic malignancies in the first half of fiscal 2022. On March 22, 2022, we announced that the preliminary PK findings with the G3 formulation were encouraging, and the exploration of the G3 formulation was ongoing.

Exploration of the PK properties of single dose administration of 10mg, 20mg, 50mg, 100mg, and 200mg dose levels with the G3 formulation have been completed. On September 12, 2022 we announced that initial PK modeling studies predict up to an 18-fold improvement in plasma steady-state exposure by the G3 formulation relative to the original formulation, and that Aptose plans to move forward with the development of the G3 formulation in AML patients under continuous dosing conditions to determine if G3 can deliver desired exposures and clinical responses while continuing to demonstrate a favorable safety profile.

On March 23, 2023, Aptose announced that during the fourth quarter of 2022, continuous dosing had been initiated with the new G3 formulation of luxeptinib in the ongoing Phase 1 a/b clinical trial in patients with R/R AML. Initial PK data from continuous dosing of the 50 mg G3 formulation show plasma exposure levels roughly equivalent to the 900mg dose (18-fold greater dose) of the original G1 formulation. Aptose will be reviewing all data with the data monitoring committee and will make the determination to escalate and at what dose.

Concurrent with the EHA Annual Congress held June8-11, 2023, Aptose held an interim clinical update webcast on June 10, 2023. During the update, Aptose reviewed clinical findings with the new G3 formulation of luxeptinib. Aptose confirmed that continuous dosing with 50mg of the G3 formulation in multiple patients achieves roughly an equivalent pharmacokinetic profile as 900mg original G1 formulation, and that dose escalation with the G3 formulation was anticipated.

A non-clinical article was published during the first quarter of 2023 in PLoS One, a highly respected online scientific publication. Titled, "Luxeptinib interferes with LYN-mediated activation of SYK and modulates BCR signaling in lymphoma," the article helps elucidate the mechanism by which luxeptinib suppresses the B-cell receptor pathway in a manner distinct from the BTK inhibitor ibrutinib. Luxeptinib was more effective than ibrutinib at reducing both steady state and anti-IgM-induced phosphorylation of the LYN and SYK kinases upstream of BTK where ibrutinib has little or no effect, suggesting luxeptinib can play a role in B-cell malignancies and inflammatory diseases distinct from ibrutinib and other BTK inhibitors.

In a separate line of non-clinical research with luxeptinib, a group from the University of Texas MD Anderson Cancer Center led by Dr. Michael Andreeff published an article in June 2023 in the journal Haematologica. The article was entitled "Concomitant targeting of FLT3 and BTK overcomes FLT3 inhibitor resistance in acute myeloid leukemia through the inhibition of autophagy," and the findings highlight the potential for co-targeting of FLT3/BTK/aurora kinases by luxeptinib to overcome resistance to certain FLT3 targeted therapies in AML, which is urgently needed.

On March 26, 2024, Aptose announced that during 2023 and early 2024, clinical evaluation of the new G3 formulation of LUX was completed. The G3 formulation was tested in a single dose bioavailability study in 20 patients, including both B-cell cancer and AML patients, and across 5 dose levels (10mg to 200mg). The G3 formulation then was evaluated in R/R AML patients with continuous dosing using two different dose levels (50mg BID and 200mg BID) in a total of 11 patients. Data demonstrated the G3 formulation dosed at 200mg twice daily can achieve 2-3uM steady state plasma levels, with approximately 10-fold better absorption and better tolerability than the original G1 formulation. Thus, the G3 formulation achieved the desired plasma exposure benchmark and can serve as the formulation of choice for future studies with LUX. Aptose is exploring alternative development paths and collaborations to advance LUX as a single agent or in combination with VEN to treat defined R/R patient populations of high unmet need.

Recent Developments

Nasdaq

Nasdaq Listing Rule 5550(b)(1)

On April 2, 2024, the Company received a letter (the "Notification Letter") from Nasdaq stating that the Company was not in compliance with Nasdaq Listing Rule 5550(b)(1) (the "Rule") because the stockholders' equity of the Company as of December 31, 2023, as reported in the Company's Annual Report on Form 10-K, was below the minimum requirement of $2.5 million (the "Stockholders' Equity Requirement"). The Company's stockholder's equity as of June 30, 2024 was negative $2.2 million. The Company submitted a plan to regain compliance on May 17, 2024, and received an extension to September 30, 2024 to regain compliance. As of September 30, 2024, the Company had not gained compliance with the requirement. Accordingly, on October 1, 2024, the Company received a staff determination letter from the Listing Department stating that the Company did not meet the terms of the extension because it did not complete its proposed financing initiatives to regain compliance. The Company requested an appeal and hearing of the Listing Department's determination, which automatically stayed Nasdaq's delisting of the Company's common shares pending the appeal panel's decision. On October 8, 2024, the Company requested an appeal and hearing; such hearing was scheduled for November 21, 2024. The hearing request automatically stayed Nasdaq's delisting of the Company's Common Shares pending the panel's decision. On December 19, 2024, the Company announced that the panel granted the Company's request for an extension to evidence compliance with all applicable criteria for continued listing on The Nasdaq Stock Market. On or before March 31, 2025, the Company will be required to demonstrate compliance with NASDAQ Listing Rule 5550(b)(1) requiring the Company to have a minimum of $2.5 million in shareholders' equity (the "Equity Rule").

Nasdaq Listing Rule 5550(a)(2)

On July 16, 2024, the Company received a deficiency letter (the "Deficiency Letter") from the Nasdaq, notifying the Company that, for the prior thirty consecutive business days, the closing bid price for the Company's common shares was below the minimum $1.00 per share required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2) (the "Minimum Bid Price Requirement"). The Deficiency Letter had no immediate effect on the listing of the Company's common shares, and its common shares will continue to trade on The Nasdaq Capital Market and the Toronto Stock Exchange ("TSX") under the symbol "APS." The Company's listing on the TSX is independent and will not be affected by the Company's Nasdaq listing status. The Company was given 180 calendar days, or until January 13, 2025, to regain compliance with the Minimum Bid Price Requirement. If at any time before January 13, 2025, the bid price of the Company's common shares closed at $1.00 per share or more for a minimum of 10 consecutive business days, Nasdaq would have provided written confirmation that the Company regained compliance. If the Company did not regain compliance with the Minimum Bid Price Requirement by January 13, 2025, the Company may, at the discretion of Nasdaq, be afforded a second 180 calendar day period to regain compliance. To qualify for the extension, the

Company was required to meet the continued listing requirement for market value of publicly held shares and all other initial listing standards for The Nasdaq Capital Market, with the exception of the bid price requirement. The Company intends to monitor the closing bid price of its common shares and may, if appropriate, consider available options, including the possibility of seeking shareholder approval of a reverse stock split, to regain compliance with the Minimum Bid Price Requirement. However, there can be no assurance that the Company will be able to regain compliance with the Minimum Bid Price Requirement or will otherwise be in compliance with other Nasdaq Listing Rules.

On August 1, 2024, the Company filed a preliminary S-1 prospectus to raise financing as part of its Compliance Plan, in addition to funds raised in the June 2024 Registered Direct Offering. On August 2, 2024, the Company implemented a reduction in force with an approximate $1.2 million per annum anticipated decrease in payroll costs.

On November 25, 2024, the Company closed a reasonable best efforts public offering with participation from the CEO and existing and new healthcare focused investors for the purchase and sale of 40,000,000 common shares at a price of $0.20 per share and warrants to purchase up to 20,000,000 common shares (the "November 2024 Offering"). The warrants have an exercise price of $0.25 per share, are exercisable immediately and will expire five years from the issuance date. The Company received aggregate gross proceeds of $8 million, before deducting placement agent fees and other offering expenses. The underwriter received 1,600,000 warrants, each at an exercise price of $0.275. The underwriter warrants will expire five years from the closing date.

On January 14, 2025, the Company received an additional staff determination letter from the Nasdaq Listing Qualifications Department of The Nasdaq Stock Market LLC notifying the Company that, for the last thirty (30) consecutive business days, the closing bid price for the Company's common shares have been below the minimum $1.00 per share required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2) (the "Minimum Bid Price Requirement"). The Company is required to present its plan of compliance to the hearings panel. The Company has been given until March 31, 2025, to regain compliance with the Minimum Bid Price Requirement.

On January 27, 2025, the Company held a Special Meeting of the shareholders of the Corporation (the "Meeting"). At the Meeting, shareholders voted in favor of an amendment to the Corporation's Articles of Incorporation, as amended, to, at the discretion of the board of directors (the "Board"), effect a reverse stock split at a ratio between 10-to-1 and 30-to-1, with the ratio within such range to be determined at the discretion of the Board.

Facility Agreement

On August 27, 2024, the Company entered into a facility agreement (the "Facility Agreement") among the Company and Hanmi Pharmaceutical Co., Ltd. (the "Lender") pursuant to which the Lender agreed to lend to the Company up to $10,000,000 (the "Loan"). The Loan is secured and repayable by the Company in full on January 31, 2027 (the "Maturity Date"), and may be prepaid without penalty at any time. The Loan bears interest at six percent per annum, payable in arrears every three months beginning on September 30, 2024 until the Maturity Date.

If the Company and Lender amend the license agreement dated November 4, 2021 between Lender and the Company, or enter into a collaboration agreement or (the "Future Collaboration Agreement"), the Loan principal and accrued and unpaid interest under the Facility Agreement (the "Converted Loan Amount") will automatically be converted to the Lender's prepayment of future milestone obligations under the Future Collaboration Agreement. Upon conversion, the Converted Loan Amount will be deemed fully paid and satisfied under the Facility Agreement, and the future milestone obligations by the Lender under the Future Collaboration Agreement will be deemed prepaid by the Lender up to the amount of the Converted Loan Amount.

Corporate Information

Aptose is a publicly traded company governed by the Canada Business Corporations Act ("CBCA"). Our headquarters are located at 66 Wellington Street West Suite 5300, TD Bank Tower Box 48 Toronto ON M5K 1E6, and our executive offices are located at 12770 High Bluff Drive, Suite 120, San Diego, CA 92130 (telephone: 858-926-2730).

We file annual, quarterly, current reports, proxy statements and other information with the SEC. The SEC maintains an Internet site that contains our public filings and other information regarding the Company, at www.sec.gov. We make these reports available free of charge at our website http://www.aptose.com (under the "Investors—Financial Information" caption).

We are also a reporting issuer under the securities laws of every province of Canada.

The Offering

Common shares offered by us	Common shares having an aggregate offering price of up to $1 million.
Common shares to be outstanding immediately after this Offering[1]	66,094,843 common shares, assuming sales of 5,913,660 common shares in this offering at an assumed public offering price of $0.1691 per share, which was the last reported sale price of our common shares on the Nasdaq Capital Market on January 30, 2025. The actual number of shares issued will vary depending on the sales price under this offering.
Manner of Offering	"At-the-market" offering that may be made from time to time through our sales agent, A.G.P./Alliance Global Partners. See "Plan of Distribution".
Use of proceeds	We intend to use the net proceeds from this offering as described under the heading "*Use of Proceeds*" in this prospectus supplement. We may use all or a portion of the net proceeds for working capital and general corporate purposes.
Nasdaq Capital Market symbol	"APTO"
Toronto Stock Exchange symbol	"APS"
Risk factors	This investment involves a high degree of risk. See "Risk Factors" beginning on page S-21 of this prospectus supplement.

The number of common shares to be outstanding prior to and after this offering is based on 60,181,183 common shares outstanding as of January 30, 2025 and excludes:

- 1,178,425 stock options outstanding as of January 30, 2025, at a weighted average exercise price of $38.84 per common share; and
- 387,930 common shares that have been reserved for issuance in connection with future grants under our security-based compensation plans as of January 30, 2025.

Unless otherwise indicated, all information contained in this prospectus assumes no exercise of the outstanding options or warrants described above.

RISK FACTORS

An investment in our common shares is highly speculative and subject to a number of known and unknown risks. Before making an investment decision, you should carefully consider the risks described in the sections entitled "Risk Factors" in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q as filed with the SEC, which are incorporated herein by reference in their entirety, as well any amendment or updates to our risk factors reflected in subsequent filings with the SEC and the risks described below. Our business, financial condition or results of operations could be materially and adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. This prospectus and the incorporated documents also contain forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks mentioned elsewhere in this prospectus.

Risks Related to this Offering

We are not in compliance with Nasdaq's continued listing requirements. If we are unable to regain compliance with the listing requirements of Nasdaq by March 31, 2025, our common shares will be delisted from Nasdaq which could have a material adverse effect on our financial condition and could make it more difficult for shareholders to sell their shares.

Nasdaq Listing Rule 5550(b)(1)

On April 2, 2024, the Company received the Notification Letter from Nasdaq stating that the Company was not in compliance with Nasdaq Listing Rule 5550(b)(1) because the stockholders' equity of the Company as of December 31, 2023, as reported in the Company's Annual Report on Form 10-K, was below the minimum requirement of $2.5 million. The Company's stockholder's equity as of June 30, 2024 was negative $2.2 million. The Company submitted a plan to regain compliance on May 17, 2024, and received an extension to September 30, 2024 to regain compliance. As of September 30, 2024, the Company had not gained compliance with the requirement. Accordingly, on October 1, 2024, the Company received a staff determination letter from the Listing Department stating that the Company did not meet the terms of the extension because it did not complete its proposed financing initiatives to regain compliance. On October 8, 2024, the Company requested an appeal and hearing; such hearing was scheduled for November 21, 2024. The hearing request automatically stayed Nasdaq's delisting of the Company's Common Shares pending the panel's decision. On December 19, 2024, the Company announced that the panel granted the Company's request for an extension to evidence compliance with all applicable criteria for continued listing on The Nasdaq Stock Market. On or before March 31, 2025, the Company will be required to demonstrate compliance with NASDAQ Listing Rule 5550(b)(1) requiring the Company to have a minimum of $2.5 million in shareholders' equity. Notwithstanding the foregoing, there can be no assurance that the Company will regain compliance with the continued listing standards under the Nasdaq Listing Rules, or that the appeal panel will grant the Company an extension of time to regain compliance, in the event the Company requests such an extension.

Nasdaq Listing Rule 5550(a)(2)

On July 16, 2024, the Company received the Deficiency Letter from Nasdaq stating that the Company was not in compliance with Nasdaq Listing Rule 5550(a)(2) because for the thirty (30) consecutive business days preceding July 16, 2024, the closing bid price for the Company's common shares were below the minimum $1.00 per share required for continued listing on The Nasdaq Capital Market. The Deficiency Letter had no immediate effect on the listing of the Company's common shares, and its common shares continue to trade on The Nasdaq Capital Market under the symbol "APTO" and on the TSX under the symbol "APS". The Company's listing on the TSX is independent and will not be affected by the Nasdaq listing status.

On August 1, 2024, the Company filed a preliminary S-1 prospectus to raise financing as part of its compliance plan, in addition to funds raised in the June 2024 Registered Direct Offering. On August 2, 2024, the Company implemented a reduction in force with an approximate $1.2 million per annum anticipated decrease in payroll costs.

On November 25, 2024, the Company closed a reasonable best efforts public offering with participation from the CEO and existing and new healthcare focused investors for the purchase and sale of 40,000,000 common shares at a price of $0.20 per share and warrants to purchase up to 20,000,000 common shares. The warrants have an exercise price of $0.25 per share, are exercisable immediately and will expire five years from the issuance date. The Company received aggregate gross proceeds of $8 million, before deducting placement agent fees and other offering expenses. The underwriter received 1,600,000 warrants, each at an exercise price of $0.275. The underwriter warrants will expire five years from the closing date.

In accordance with Nasdaq Listing Rule 5810(c)(3)(A), the Company was given one hundred and eighty (180) calendar days, or until January 10, 2025, to regain compliance with the Minimum Bid Price Requirement. On January 14, 2025, the Company received an additional staff determination letter from the Nasdaq Listing Qualifications Department of The Nasdaq Stock Market LLC notifying the Company that, for the last thirty (30) consecutive business days, the closing bid price for the Company's common shares have been below the minimum $1.00 per share required for continued listing on The Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(a)(2). The Company was required to present its plan of compliance to the hearings panel. The panel determined that the Company has until March 31, 2025, to regain compliance with the Minimum Bid Price Requirement.

On January 27, 2025, the Company held a Meeting of the shareholders of the Corporation. At the Meeting, shareholders voted in favor of an amendment to the Corporation's Articles of Incorporation, as amended, to, at the discretion of the Board, effect a reverse stock split at a ratio between 10-to-1 and 30-to-1, with the ratio within such range to be determined at the discretion of the Board (the "Reverse Split"), The Reverse Split may help the Company gain compliance with the Minimum Bid Price Requirement.

The Company intends to monitor the closing bid price of its common shares and may, if appropriate, consider other available options to regain compliance with the Minimum Bid Price Requirement. However, there can be no assurance that the Company will be able to regain compliance with the Minimum Bid Price Requirement or will otherwise be in compliance with other Nasdaq Listing Rules.

Management will have broad discretion as to the use of the proceeds from this offering, and we may not use the proceeds effectively.

Our management will have broad discretion in the application of the proceeds from the offering, and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our common shares. Our failure to apply these funds effectively could have a material adverse effect on our business and cause the price of our common shares to decline.

If you purchase our common shares in this offering, you will incur immediate and substantial dilution in the book value of your shares.

Investors purchasing common shares in this offering will pay a price per share that substantially exceeds the as adjusted book value per share of our tangible assets as of September 30, 2024. As a result, investors purchasing common shares in this offering will incur immediate dilution of $0.3077 per share on a *pro forma* as adjusted basis, based on the difference between the assumed public offering price of $0.1691 per share, which was the last reported sale price of our common shares on the Nasdaq Capital Market on January 30, 2025, and the *pro forma* as-adjusted net tangible book value per share of our outstanding common shares as of January 30, 2025.

These future issuances of common shares or common share-related securities and any additional shares issued in connection with acquisitions, if any, may result in further dilution. For a further description of the dilution that you will experience immediately after this offering, see "Dilution."

Future sales of a significant number of our common shares in the public markets, or the perception that such sales could occur, could depress the market price of our common shares.

Sales of a substantial number of our common shares in the public markets, or the perception that such sales could occur, could depress the market price of our common shares and impair our ability to raise capital through the sale of additional equity securities. A substantial number of our common shares are being offered by this prospectus supplement, and we cannot predict if and when the sales agents may sell such shares in the public markets. In addition, we cannot predict the number of these shares that might be sold nor the effect that future sales of our common shares would have on the market price of our common shares.

We will require additional capital funding, the receipt of which may impair the value of our common shares.

Our future capital requirements depend on many factors, including our research, development, sales and marketing activities. We will need to raise additional capital through public or private equity or debt offerings or through arrangements with strategic partners or other sources in order to continue to develop our drug candidates. There can be no assurance that additional capital will be available when needed or on terms satisfactory to us, if at all. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution and the new equity securities may have greater rights, preferences or privileges than our existing common shares.

The common shares offered hereby will be sold in "at the market" offerings, and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold, and there is no minimum or maximum sales price. Investors may experience a decline in the value of their shares as a result of share sales made at prices lower than the prices they paid.

The actual number of shares we will issue under the sales agreement with A.G.P., at any one time or in total, is uncertain.

Subject to certain limitations in the sales agreement with A.G.P. and compliance with applicable law, we have the discretion to deliver placement notices to A.G.P. at any time throughout the term of the sales agreement. The number of shares that are sold by A.G.P. after delivering a placement notice will fluctuate based on the market price of the common shares during the sales period and limits we set with A.G.P.

Risks Related to Tax Regulations

We expect to be a "passive foreign investment company" for our current taxable year, which may have adverse U.S. federal income tax consequences for U.S. investors

We believe we were a "passive foreign investment company" (a "PFIC") within the meaning of Section 1297 of the U.S. Internal Revenue Code of 1986, as amended (the "Code") for our most recently completed taxable year and based on the nature of our business, the projected composition of our gross income and the projected composition and estimated fair market values of our assets, we expect to be a PFIC for our current taxable year and may be a PFIC in subsequent tax years. If we are a PFIC for any year during a U.S. taxpayer's holding period of common shares, then such U.S. taxpayer generally will be required to treat any gain realized upon a disposition of the common shares or any so-called ''excess distribution'' received on its common shares as ordinary income, and to pay an interest charge on a portion of such gain or distribution. In certain circumstances, the sum of the tax and the interest charge may exceed the total amount of proceeds realized on the disposition, or the amount of excess distribution received, by the U.S. taxpayer. Subject to certain limitations, these tax consequences may be mitigated if a U.S. taxpayer makes a timely and effective QEF Election (as defined below)

with respect to the common shares or a Mark-to-Market Election (as defined below) with respect to the common shares. U.S. taxpayers should be aware that there can be no assurances that we will satisfy the record keeping requirements that apply to a QEF (as defined below), or that we will supply U.S. taxpayers with information that such U.S. taxpayers are required to report under the QEF rules, in the event that we are a PFIC. Thus, U.S. Holders may not be able to make a QEF Election with respect to their common shares. A U.S. taxpayer who makes a Mark-to-Market Election generally must include as ordinary income each year the excess of the fair market value of the common shares over the taxpayer's basis therein. Each potential investor who is a U.S. taxpayer should review the discussion below under the heading "*Certain Material U.S. Federal Income Tax Considerations—Passive Foreign Investment Company Rules*" in its entirety and should consult its own tax advisor regarding the tax consequences of the PFIC rules and the acquisition, ownership, and disposition of the common shares.

USE OF PROCEEDS

We intend to use any proceeds from this offering for working capital and general corporate purposes. We cannot specify with certainty all of the particular uses for the net proceeds that we will have from this offering. Therefore, our management will have broad discretion to determine the specific use for the net proceeds and we may use the proceeds for purposes that are not contemplated at the time of this offering.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. We may also use a portion of the net proceeds to fund or clinical plans. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds received by us in this offering. Predicting the cost necessary to develop product candidates can be difficult and we anticipate that we will need additional funds to complete the development of our existing product candidates and to develop any future product candidates. The amounts and timing of our actual expenditures and the extent of clinical development may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from preclinical studies and any ongoing clinical trials or clinical trials we may commence in the future, as well as any collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

DIVIDEND RIGHTS AND DIVIDEND POLICY

The holders of common shares are entitled, at the discretion of our board of directors, to receive out of any or all of our assets properly available for the payment of dividends, any dividend declared by the board of directors and payable by us on our common shares. Any dividend unclaimed after a period of six years from the date on which the same has been declared to be payable shall be forfeited and shall revert to us. We and our subsidiaries are, and may become, parties to agreements pursuant to which we borrow money, and certain covenants in these agreements may limit our ability to pay dividends or other distributions with respect to the common shares or to repurchase common shares.

We have not paid any dividends since our incorporation. At the discretion of our board of directors, we will consider paying dividends in the future as our operational circumstances may permit, having regard to, among other things, our earnings, cash flow and financial requirements. It is the current policy of our board of directors to retain all earnings to finance our business plan.

DILUTION

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

Our historical net tangible book value as of September 30, 2024 was $(9.8) million, or $(0.5019) per common share. Our historical net tangible book value is the amount of our total tangible assets less our liabilities. Historical net tangible book value per common share is our historical net tangible book value divided by the number of common shares outstanding as of September 30, 2024.

Dilution represents the difference between the amount per share paid by purchasers in this offering and the*pro forma* as adjusted net tangible book value per share of common stock after the offering. After giving effect to (i) the issuance of 40,000,000 shares issued in the November 2024 Offering; and (ii) after giving effect to the sale of 5,913,661 shares of our common stock, representing a net amount of $726,127 after deducting sales agent commissions and estimated offering expenses payable by us, at an assumed offering price of $0.1691 per share, the last reported sale price of our common stock on Nasdaq on January 30, 2025, but without adjusting for any other change in our net tangible book value subsequent to September 30, 2024, our *pro forma* as adjusted net tangible book value would have been $(9.0) million or $(0.1386) per share. This represents an immediate increase in net tangible book value on a *pro forma* basis of $0.0260 per share to our existing stockholders and immediate dilution of $0.3077 per share to new investors purchasing securities at the assumed public offering price.

The following table illustrates the dilution in net tangible book value per share to new investors as of September 30, 2024. The following table illustrates this calculation on a per share basis. The *pro forma* as adjusted information is illustrative only and will adjust based on the actual price to the public, the actual number of shares sold and other terms of the offering determined at the time shares of our common stock are sold pursuant to this prospectus supplement. The shares sold in this offering, if any, will be sold from time to time at various prices.

Assumed offering price per share		$ 0.1691
Historical net tangible book value per share as of September 30, 2024	$(0.5019)	
Pro forma increase in net tangible book value per share as of September 30, 2024 attributable to November 2024 Offering	$ 0.3373	
Increase in net tangible book value per share attributable to new investors in this offering	$ 0.0260	
Pro forma as adjusted net tangible book value per share after this offering and the November 2024 Offering		$ (0.1386)
Dilution in net tangible book value per share to new investors on a*pro forma* as adjusted basis		$ 0.3077

The number of common shares that will be outstanding after this offering is based on 65,434,854 shares of common, outstanding as of September 30, 2024, on a pro forma basis, and, unless otherwise indicated, excludes, as of such date, the following:

- 1,236,363 stock options at a weighted average exercise price of $38.75 per share; and
- 329,992 common shares that have been reserved for issuance in connection with future grants under our security-based compensation plans.

The discussion and table above assume no exercise of outstanding options or warrants. To the extent that options or warrants are exercised, you may experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

PLAN OF DISTRIBUTION

We have entered into the sales agreement with A.G.P. under which we may issue and sell shares of our common shares from time to time up to $1 million to or through A.G.P., acting as our sales agent or principal. The sales of our common shares, if any, under this prospectus supplement will be made at market prices by any method deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act, including sales made directly on Nasdaq, on any other existing trading market for our common shares or to or through a market maker. If we and A.G.P. agree on any method of distribution other than sales of our common shares on or through the Nasdaq Capital Market or another existing trading market in the United States at market prices, we will file a further prospectus supplement providing all information about such offering as required by Rule 424(b) under the Securities Act.

Each time that we wish to issue and sell our common shares under the sales agreement, we will provide A.G.P. with a placement notice describing the amount of shares to be sold, the time period during which sales are requested to be made, any limitation on the amount of common shares that may be sold in any single day, any minimum price below which sales may not be made or any minimum price requested for sales in a given time period and any other instructions relevant to such requested sales. Upon receipt of a placement notice, A.G.P., acting as our sales agent, will use commercially reasonable efforts, consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of Nasdaq, to sell common shares under the terms and subject to the conditions of the placement notice and the sales agreement. We or A.G.P. may suspend the offering of common shares pursuant to a placement notice upon notice and subject to other conditions.

Settlement for sales of common shares, unless the parties agree otherwise, will occur on the first trading day following the date on which any sales are made in return for payment of the net proceeds to us. There are no arrangements to place any of the proceeds of this offering in an escrow, trust or similar account. Sales of our common shares as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and A.G.P. may agree upon.

Because there are no minimum sale requirements as a condition to this offering, the actual total public offering price, commissions and net proceeds to us, if any, are not determinable at this time. The actual dollar amount and number of common shares we sell through this prospectus supplement will be dependent, among other things, on market conditions and our capital raising requirements.

We will report at least quarterly the number of common shares sold through A.G.P. under the sales agreement, the net proceeds to us and the compensation paid by us to A.G.P. in connection with the sales of common shares under the sales agreement.

The offering pursuant to the sales agreement will terminate upon the earlier of (i) the sale of all common shares subject to the sales agreement and (ii) termination of the sales agreement as permitted therein. We may terminate the sales agreement in our sole discretion at any time by giving two days' prior notice to A.G.P. A.G.P. may terminate the sales agreement under the circumstances specified in the sales agreement and in its sole discretion at any time by giving two days' prior notice to us.

This prospectus supplement in electronic format may be made available on a website maintained by A.G.P., and A.G.P. may distribute this prospectus supplement electronically.

Fees and Expenses

We will pay A.G.P. commissions for its services in acting as our sales agent in the sale of our common shares pursuant to the sales agreement. A.G.P. will be entitled to compensation at a fixed commission rate of 3.0% of the gross proceeds from the sale of our common shares on our behalf pursuant to the sales agreement. We have

also agreed to reimburse A.G.P. for its reasonable and documented out-of-pocket expenses (including but not limited to the reasonable and documented fees and expenses of its legal counsel) in an amount not to exceed $50,000 and up to an additional $2,500 per quarter (and in no event more than $10,000 per fiscal year) for maintenance. We have also agreed to reimburse A.G.P. for its reasonable and documented out-of-pocket expenses (including but not limited to the reasonable and documented fees and expenses of its legal counsel) in an amount not to exceed $10,000 for each program "refresh" (filing of a new registration statement, prospectus, or prospectus supplement relating to the common shares and/or an amendment to the Sales Agreement).

We estimate that the total expenses for this offering, excluding compensation payable to A.G.P. and certain expenses reimbursable to A.G.P. under the terms of the sales agreement, will be approximately $50,000. The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory, or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such common shares.

Regulation M

In connection with the sale of the common shares on our behalf, A.G.P. will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation of A.G.P. will be deemed to be underwriting commissions or discounts.

A.G.P. will not engage in any market making activities involving our common shares while the offering is ongoing under this prospectus supplement if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act. As our sales agent, A.G.P. will not engage in any transactions that stabilizes our common shares.

Indemnification

We have agreed to indemnify A.G.P. against certain civil liabilities, including liabilities under the Securities Act and the Exchange Act, and to contribute to payments that the A.G.P. may be required to make in respect of such liabilities.

Listing

Our common stock is listed on The Nasdaq Capital Market under the symbol "APTO" And on the Toronto Stock Exchange as "APS."

Other Relationships

A.G.P. and/or its affiliates have in the past engaged, and may in the future engage, in transactions with, and may perform, from time to time, investment banking and advisory services for us in the ordinary course of their business and for which it would receive customary fees and expenses. In addition, in the ordinary course of its business activities, A.G.P. and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for its own account and for the accounts of its customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates.

In November 2024, we completed a public offering of our securities. In connection therewith, we entered into a placement agency agreement with A.G.P. pursuant to which we agreed to pay an aggregate fee equal to 7% of the gross proceeds received by us from the sale of the securities in the transaction. We also agreed to reimburse the January Placement Agents for (i) up to $75,000 for the placement agents' legal fees, (ii) up to $25,000 of the aggregate gross proceeds of the offering for certain reasonable non-accountable fees and expenses and (iii) closing costs (including the reimbursement of the reasonable out-of-pocket cost of the escrow agent or clearing agent) in an amount up to $10,000.

The Toronto Stock Exchange has accepted notice of the offering and we are relying on the exemption included in section 602.1 of the TSX Company Manual. Notwithstanding anything to the contrary, all sales and solicitations of sales of the common shares by A.G.P. pursuant to the Sales Agreement shall be made solely in the United States and no sales or solicitations of sales of the common shares by A.G.P. shall be done in Canada or through the facilities of the Toronto Stock Exchange.

MATERIAL UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS

The following is a general summary of certain material U.S. federal income tax considerations applicable to a U.S. Holder (as defined below) arising from and relating to the acquisition, ownership and disposition of our common shares acquired pursuant to this offering. This summary is for general information purposes only and does not purport to be a complete analysis or listing of all potential U.S. federal income tax considerations that may apply to a U.S. Holder arising from or relating to the acquisition, ownership and disposition of our common shares acquired pursuant to this offering. In addition, this summary does not take into account the individual facts and circumstances of any particular U.S. Holder that may affect the U.S. federal income tax consequences to such U.S. Holder, including, without limitation, specific tax consequences to a U.S. Holder under an applicable income tax treaty. Accordingly, this summary is not intended to be, and should not be construed as, legal or U.S. federal income tax advice with respect to any particular U.S. Holder. This summary does not address the U.S. federal alternative minimum tax, U.S. federal net investment income tax, U.S. federal estate and gift tax, U.S. state and local tax, and non-U.S. tax consequences to U.S. Holders of the acquisition, ownership and disposition of our common shares. In addition, except as specifically set forth below, this summary does not discuss applicable income tax reporting requirements. Each prospective U.S. Holder should consult its own tax advisors regarding the U.S. federal, state and local, and non-U.S., tax consequences relating to the acquisition, ownership and disposition of our common shares acquired pursuant to this offering.

No ruling from the Internal Revenue Service (the "IRS") has been requested, or will be obtained, regarding the U.S. federal income tax consequences of the acquisition, ownership and disposition of our common shares. This summary is not binding on the IRS, and the IRS is not precluded from taking a position that is different from, or contrary to, the positions taken in this summary. In addition, because the authorities on which this summary is based are subject to various interpretations, the IRS and the U.S. courts could disagree with one or more of the conclusions described in this summary.

Scope of this Summary

Authorities

This summary is based on the U.S. Internal Revenue Code of 1986, as amended (the "Code"), Treasury Regulations (whether final, temporary, or proposed) promulgated thereunder, published rulings of the IRS, published administrative positions of the IRS, the current provisions of the Convention between the United States of America and Canada with respect to Taxes on Income and on Capital of 1980, as amended (the "Canada-U.S. Tax Convention"), and U.S. court decisions that are applicable, and, in each case, as in effect and available, as of the date of this document. Any of the authorities on which this summary is based could be changed in a material and adverse manner at any time, and any such change could be applied on a retroactive or prospective basis, which could affect the U.S. federal income tax considerations described in this summary. Except as provided herein, 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 or prospective basis.

U.S. Holders

For purposes of this summary, the term "U.S. Holder" means a beneficial owner of our common shares acquired pursuant to this offering that is for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate whose income is subject to U.S. federal income taxation regardless of its source; or
- a trust that (1) is subject to the primary supervision of a court within the U.S. and the control of one or more U.S. persons for all substantial decisions or (2) has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

Non-U.S. Holders

For purposes of this summary, a "non-U.S. Holder" is a beneficial owner of our common shares acquired pursuant to this offering that is not a U.S. Holder or an entity or arrangement classified as a partnership for U.S. federal income tax purposes. This summary does not address the U.S. federal, state or local tax consequences to non-U.S. Holders arising from or relating to the acquisition, ownership and disposition of our common shares. Accordingly, a non-U.S. Holder should consult its own tax advisors regarding the U.S. federal, state or local andnon-U.S. tax consequences (including the potential application of and operation of any income tax treaties) relating to the acquisition, ownership and disposition of our common shares.

U.S. Holders Subject to Special U.S. Federal Income Tax Rules Not Addressed

This summary does not address the U.S. federal income tax considerations applicable to U.S. Holders that are subject to special provisions under the Code, including, but not limited to U.S. Holders that: (a) are tax-exempt organizations, qualified retirement plans, individual retirement accounts, or other tax-deferred accounts; (b) are financial institutions, underwriters, insurance companies, real estate investment trusts, or regulated investment companies; (c) are broker-dealers, dealers, or traders in securities or currencies that elect to apply a mark-to-market accounting method; (d) have a "functional currency" other than the U.S. dollar; (e) own our common shares as part of a straddle, hedging transaction, conversion transaction, constructive sale, or other integrated transaction; (f) acquire our common shares in connection with the exercise of employee stock options or otherwise as compensation for services; (g) hold our common shares other than as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment purposes); (h) are subject to special tax accounting rules with respect to our common shares; (i) are partnerships or other "pass-through" entities (and partners or other owners thereof); (j) are S corporations (and shareholders thereof); (k) are U.S. expatriates or former long-term residents of the United States subject to Section 877 or 877A of the Code; (l) hold our common shares in connection with a trade or business, permanent establishment, or fixed base outside the United States; or (m) own, have owned or will own (directly, indirectly, or by attribution) 10% or more of the total combined voting power or value of our common shares. U.S. Holders that are subject to special provisions under the Code, including, but not limited to, U.S. Holders described immediately above, should consult their own tax advisors regarding the U.S. federal, state and local, and non-U.S., tax consequences relating to the acquisition, ownership and disposition of our common shares.

If an entity or arrangement that is classified as a partnership (or other "pass-through" entity) for U.S. federal income tax purposes holds our common shares, the U.S. federal income tax consequences to such entity or arrangement and the partners (or other owners or participants) of such entity or arrangement generally will depend on the activities of the entity or arrangement and the status of such partners (or owners or participants). This summary does not address the tax consequences to any such partner (or owner or participant). Partners (or other owners or participants) of entities or arrangements that are classified as partnerships or as "pass-through" entities for U.S. federal income tax purposes should consult their own tax advisors regarding the U.S. federal income tax consequences arising from and relating to the acquisition, ownership and disposition of our common shares.

Passive Foreign Investment Company Rules

If we were to constitute a "passive foreign investment company" within the meaning of Section 1297 of the Code (a "PFIC") for any taxable year during a U.S. Holder's holding period, then certain potentially adverse rules would affect the U.S. federal income tax consequences to a U.S. Holder resulting from the acquisition, ownership and disposition of our common shares. We believe we were a PFIC for our most recently completed taxable year, and based on the nature of our business, the projected composition of our gross income and the projected composition and estimated fair market values of our assets, we expect to be a PFIC for our current taxable year and may be a PFIC in subsequent tax years. No opinion of legal counsel or ruling from the IRS concerning our status as a PFIC has been obtained or is currently planned to be requested. The determination of whether any

corporation was, or will be, a PFIC for a tax year depends, in part, on the application of complex U.S. federal income tax rules, which are subject to differing interpretations. In addition, whether any corporation will be a PFIC for any tax year depends on the assets and income of such corporation over the course of each such tax year and, as a result, our status as a PFIC and the status of any of our subsidiaries as a PFIC for the current tax year cannot be predicted with certainty as of the date of this document. Accordingly, there can be no assurance that the IRS will not challenge any determination made by us (or any of our non-U.S. subsidiaries) concerning our (or its) PFIC status for any particular tax year. Each U.S. Holder should consult its own tax advisors regarding the determination and consequences of our PFIC status and of the PFIC status of each of our non-U.S. subsidiaries.

In any year in which we are classified as a PFIC, a U.S. Holder will be required to file an annual report with the IRS containing such information as Treasury Regulations and/or other IRS guidance may require. In addition to penalties, a failure to satisfy such reporting requirements may result in an extension of the time period during which the IRS can assess a tax. U.S. Holders should consult their own tax advisors regarding the requirements of filing such information returns under these rules, including the requirement to file an IRS Form 8621 annually.

We generally will be a PFIC if, for a tax year, (a) 75% or more of our gross income in such tax year is passive income (the "PFIC income test") or (b) 50% or more of the value of our assets either produce passive income or are held for the production of passive income, based on the quarterly average of the fair market value of such assets (the "PFIC asset test"). "Gross income" generally includes all sales revenues less the cost of goods sold, plus income from investments and from incidental or outside operations or sources, and "passive income" generally includes, for example, dividends, interest, certain rents and royalties, certain gains from the sale of stock and securities, and certain gains from commodities transactions. Active business gains arising from the sale of commodities generally are excluded from passive income if substantially all of a foreign corporation's commodities are stock in trade or inventory, depreciable property used in a trade or business, or supplies regularly used or consumed in the ordinary course of its trade or business, and certain other requirements are satisfied.

For purposes of the PFIC income test and PFIC asset test described above, if we own, directly or indirectly, 25% or more of the total value of the outstanding shares of another corporation, we will be treated as if we (a) held a proportionate share of the assets of such other corporation and (b) received directly a proportionate share of the income of such other corporation. In addition, for purposes of the PFIC income test and PFIC asset test described above, and assuming certain other requirements are met, "passive income" does not include certain interest, dividends, rents, or royalties that are received or accrued by us from certain "related persons" (as defined in Section 954(d)(3) of the Code) also organized in Canada, to the extent such items are properly allocable to the income of such related person that is not passive income.

Under certain attribution rules, if we are a PFIC, U.S. Holders will generally be deemed to own their proportionate share of our direct or indirect equity interest in any company that is also a PFIC (a "Subsidiary PFIC"), and will generally be subject to U.S. federal income tax as described below under "*Default PFIC Rules Under Section 1291 of the Code*" on their proportionate share of (a) any "excess distributions," as described below, on the stock of a Subsidiary PFIC and (b) a disposition or deemed disposition of the stock of a Subsidiary PFIC by us or another Subsidiary PFIC, both as if such U.S. Holders directly held the shares of such Subsidiary PFIC. In addition, U.S. Holders may be subject to U.S. federal income tax on any indirect gain realized on the stock of a Subsidiary PFIC on the sale or disposition of our common shares. Accordingly, U.S. Holders should be aware that they could be subject to tax under the PFIC rules even if no distributions are received and no redemptions or other dispositions of our common shares are made.

Default PFIC Rules Under Section 1291 of the Code

If we are a PFIC for any tax year during which a U.S. Holder owns our common shares, the U.S. federal income tax consequences to such U.S. Holder of the acquisition, ownership, and disposition of our common shares will depend on whether such U.S. Holder makes an election to treat us as a "qualified electing fund" or "QEF" (a

"QEF Election") with respect to or makes a mark-to-market election under Section 1296 of the Code (a "Mark-to-Market Election") with respect to our common shares. A U.S. Holder that does not make either a QEF Election or a Mark-to-Market Election (a "Non-Electing U.S. Holder") will be taxable as described below.

A Non-Electing U.S. Holder will be subject to the rules of Section 1291 of the Code (described below) with respect to: (a) any gain recognized on the sale or other taxable disposition of our common shares; and (b) any "excess distribution" received on our common shares. A distribution generally will be an "excess distribution" to the extent that such distribution (together with all other distributions received in the current tax year) exceeds 125% of the average distributions received during the three preceding tax years (or during a U.S. Holder's holding period for our common shares, if shorter).

Under Section 1291 of the Code, if we are a PFIC, any gain recognized on the sale or other taxable disposition of our common shares (including an indirect disposition of the stock of any Subsidiary PFIC), and any "excess distribution" received on our common shares or a distribution by a Subsidiary PFIC to its shareholder that is deemed to be received by a U.S. Holder (including a constructive distribution), must be ratably allocated to each day in a Non-Electing U.S. Holder's holding period for the respective common shares. The amount of any such gain or excess distribution allocated to the tax year of disposition or distribution of the excess distribution and to years before the entity became a PFIC, if any, would be taxed as ordinary income (and not eligible for certain preferential tax rates, as discussed below). The amounts allocated to any other tax year would be subject to U.S. federal income tax at the highest tax rate applicable to ordinary income in each such year, and an interest charge would be imposed on the tax liability for each such year, calculated as if such tax liability had been due in each such year. A Non-Electing U.S. Holder that is not a corporation must treat any such interest paid as "personal interest," which is not deductible.

If we are a PFIC for any tax year during which aNon-Electing U.S. Holder holds our common shares, we will continue to be treated as a PFIC with respect to such Non-Electing U.S. Holder, regardless of whether we cease to be a PFIC in one or more subsequent tax years. If we cease to be a PFIC, a Non-Electing U.S. Holder may terminate this deemed PFIC status with respect to our common shares by electing to recognize gain (which will be taxed under the rules of Section 1291 of the Code discussed above), but not loss, as if such common shares were sold on the last day of the last tax year for which we were a PFIC.

QEF Election

A U.S. Holder that makes a timely and effective QEF Election for the first tax year in which the holding period of its common shares begins generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to its common shares. However, 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) our net capital gain, which will be taxed as long-term capital gain to such U.S. Holder, and (b) our ordinary earnings, which will be taxed as ordinary income to such U.S. Holder. Generally, "net capital gain" is the excess of (a) net long-term capital gain over (b) 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 QEF Election will be subject to U.S. federal income tax on such amounts for each tax year in which we are a PFIC, regardless of whether such amounts are actually distributed to such U.S. Holder by us. However, for any tax year in which we are a PFIC and have no net income or gain, U.S. Holders that have made a QEF Election would not have any income inclusions as a result of the QEF Election. If a U.S. Holder that made a QEF Election has an income inclusion, such a U.S. Holder may, subject to certain limitations, elect to defer payment of current U.S. federal income tax on such amounts, subject to an interest charge. If such U.S. Holder is not a corporation, any such interest paid will be treated as "personal interest," which is not deductible.

A U.S. Holder that makes a timely and effective QEF Election with respect to us generally (a) may receive a tax-free distribution from us to the extent that such distribution represents our "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 its 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 procedure for making a QEF Election, and the U.S. federal income tax consequences of making a QEF Election, will depend on whether such QEF Election is timely. A QEF Election will be treated as "timely" for purposes of avoiding the default PFIC rules discussed above if such QEF Election is made for the first year in the U.S. Holder's holding period for its common shares in which we are a PFIC. A U.S. Holder may make a timely QEF Election by filing the appropriate QEF Election documents at the time such U.S. Holder files a U.S. federal income tax return for such year. If a U.S. Holder owns PFIC stock indirectly through another PFIC, separate QEF Elections must be made for the PFIC in which the U.S. Holder is a direct shareholder and the Subsidiary PFIC for the QEF rules to apply to both PFICs.

A QEF Election will apply to the tax year for which such QEF Election is timely made and to all subsequent tax years, unless such QEF Election is invalidated or terminated or the IRS consents to revocation of such QEF Election. If a U.S. Holder makes a QEF Election and, in a subsequent tax year, we cease to be a PFIC, the QEF Election will remain in effect (although it will not be applicable) during those tax years in which we are not a PFIC. Accordingly, if we become a PFIC in another subsequent tax year, the QEF Election will be effective and the U.S. Holder will be subject to the QEF rules described above during any subsequent tax year in which we qualify as a PFIC.

U.S. Holders should be aware that there can be no assurances that we will satisfy the record keeping requirements that apply to a QEF, or that we will supply U.S. Holders with information that such U.S. Holders are required to report under the QEF rules, in the event that we are a PFIC. Thus, U.S. Holders may not be able to make a QEF Election with respect to their common shares. Each U.S. Holder should consult its own tax advisors regarding the availability of, and procedure for making, a QEF Election with respect to us and any Subsidiary PFIC.

A U.S. Holder makes a QEF Election by attaching a completed IRS Form 8621, including a PFIC Annual Information Statement, to a timely filed United States federal income tax return. However, if we do not provide the required information with regard to us or any of our Subsidiary PFICs, U.S. Holders will not be able to make a QEF Election for such entity and will continue to be subject to the rules of Section 1291 of the Code discussed above that apply to Non-Electing U.S. Holders with respect to the taxation of gains and excess distributions.

Mark-to-Market Election

A U.S. Holder may make aMark-to-Market Election with respect to our common shares only if our common shares are marketable stock. Our common shares generally will be "marketable stock" if our common shares are regularly traded on (a) a national securities exchange that is registered with the SEC, (b) the national market system established pursuant to section 11A of the Exchange Act, or (c) a foreign securities exchange that is regulated or supervised by a governmental authority of the country in which the market is located, provided that (i) such foreign exchange has trading volume, listing, financial disclosure, and surveillance requirements, and meets other requirements and the laws of the country in which such foreign exchange is located, together with the rules of such foreign exchange, ensure that such requirements are actually enforced and (ii) the rules of such foreign exchange effectively promote active trading of listed stocks. If such stock is traded on such a qualified exchange or other market, such stock generally will be "regularly traded" for any calendar year during which such stock is traded, other than in de minimis quantities, on at least 15 days during each calendar quarter. Each U.S. Holder should consult its own tax advisor in this matter.

A U.S. Holder that makes aMark-to-Market Election with respect to its common shares generally will not be subject to the rules of Section 1291 of the Code discussed above with respect to such common shares. However, if a U.S. Holder does not make a Mark-to-Market Election beginning in the first tax year of such U.S. Holder's

holding period for the common shares for which we are a PFIC and such U.S. Holder has not made a timely QEF Election, the rules of Section 1291 of the Code discussed above will apply to certain dispositions of, and distributions on, the common shares.

A U.S. Holder that makes aMark-to-Market Election will include in ordinary income, for each tax year in which we are a PFIC, an amount equal to the excess, if any, of (a) the fair market value of its common shares, as of the close of such tax year over (b) such U.S. Holder's adjusted tax basis in such common shares. A U.S. Holder that makes a Mark-to-Market Election will be allowed a deduction in an amount equal to the excess, if any, of (a) such U.S. Holder's adjusted tax basis in its common shares, over (b) the fair market value of such common shares (but only to the extent of the net amount of previously included income as a result of the Mark-to-Market Election for prior tax years).

A U.S. Holder that makes aMark-to-Market Election generally also will adjust such U.S. Holder's tax basis in our common shares to reflect the amount included in gross income or allowed as a deduction because of such Mark-to-Market Election. In addition, upon a sale or other taxable disposition of common shares, a U.S. Holder that makes a Mark-to-Market Election will recognize ordinary income or ordinary loss (not to exceed the excess, if any, of (a) the amount included in ordinary income because of such Mark-to-Market Election for prior tax years over (b) the amount allowed as a deduction because of such Mark-to-Market Election for prior tax years). Losses that exceed this limitation are subject to the rules generally applicable to losses provided in the Code and Treasury Regulations.

A U.S. Holder makes aMark-to-Market Election by attaching a completed IRS Form 8621 to a timely filed United States federal income tax return. A Mark-to-Market Election applies to the tax year in which suchMark-to-Market Election is made and to each subsequent tax year, unless our common shares cease to be "marketable stock" or the IRS consents to revocation of such election. Each U.S. Holder should consult its own tax advisors regarding the availability of, and procedure for making, a Mark-to-Market Election.

Although a U.S. Holder may be eligible to make aMark-to-Market Election with respect to our common shares, no such election may be made with respect to the stock of any Subsidiary PFIC that a U.S. Holder is treated as owning, because such stock is not marketable. Hence, the Mark-to-Market Election will not be effective to eliminate the interest charge and other income inclusion rules described above with respect to deemed dispositions of Subsidiary PFIC stock or distributions from a Subsidiary PFIC to its shareholder.

Other PFIC Rules

Under Section 1291 of the Code, the IRS has issued proposed Treasury Regulations that would impact certain consequences of the application of the PFIC regime to U.S. Holders. Among other consequences, and subject to certain exceptions, such proposed Treasury Regulations would cause a U.S. Holder that had not made a timely QEF Election to recognize gain (but not loss) upon certain transfers of our common shares that would otherwise be tax-deferred (e.g., gifts and exchanges pursuant to corporate reorganizations). However, the specific U.S. federal income tax consequences to a U.S. Holder may vary based on the manner in which such common shares are transferred.

If finalized in their current form, the proposed Treasury Regulations applicable to PFICs would be effective for transactions occurring on or after April 1, 1992. Because the proposed Treasury Regulations have not yet been adopted in final form, they are not currently effective, and there is no assurance that they will be adopted in the form and with the effective date proposed. Nevertheless, the IRS has announced that, in the absence of final Treasury Regulations, taxpayers may apply reasonable interpretations of the Code provisions applicable to PFICs and that it considers the rules set forth in the proposed Treasury Regulations to be reasonable interpretations of those Code provisions. The PFIC rules are complex, and the implementation of certain aspects of the PFIC rules requires the issuance of Treasury Regulations which in many instances have not been promulgated and which, when promulgated, may have retroactive effect. U.S. Holders should consult their own tax advisors about the potential applicability of the proposed Treasury Regulations.

Certain additional adverse rules may apply with respect to a U.S. Holder if we are a PFIC, regardless of whether such U.S. Holder makes a QEF Election. For example, under Section 1298(b)(6) of the Code, a U.S. Holder that uses common shares as security for a loan will, except as may be provided in Treasury Regulations, be treated as having made a taxable disposition of such common shares.

In addition, a U.S. Holder who acquires common shares from a decedent will not receive a "step up" in tax basis of such common shares to fair market value unless such decedent had a timely and effective QEF Election in place.

Special rules also apply to the amount of foreign tax credit that a U.S. Holder may claim on a distribution from a PFIC. Subject to such special rules, foreign taxes paid with respect to any distribution in respect of stock in a PFIC are generally eligible for the foreign tax credit. The rules relating to distributions by a PFIC and their eligibility for the foreign tax credit are complicated, and a U.S. Holder should consult with its own tax advisors regarding the availability of the foreign tax credit with respect to distributions by a PFIC.

The PFIC rules are complex, and each U.S. Holder should consult its own tax advisors regarding the PFIC rules (including the availability and advisability of making a QEF Election or Mark-to-Market Election) and how the PFIC rules may affect the U.S. federal income tax consequences of the acquisition, ownership, and disposition of our common shares.

Certain additional adverse rules may apply with respect to a U.S. Holder if we are a PFIC, regardless of whether the U.S. Holder makes a QEF Election. These rules include special rules that apply to the amount of foreign tax credit that a U.S. Holder may claim on a distribution from a PFIC. Subject to these special rules, foreign taxes paid with respect to any distribution in respect of stock in a PFIC are generally eligible for the foreign tax credit. U.S. Holders are urged to consult their own tax advisors regarding the potential application of the PFIC rules to the ownership and disposition of our common shares, and the availability of certain U.S. tax elections under the PFIC rules.

General Rules Applicable to the Ownership and Disposition of Common Shares

The following discussion is subject, in its entirety, to the rules described above under the heading "Passive Foreign Investment Company Rules".

Distributions on Common Shares

A U.S. Holder that receives a distribution, including a constructive distribution, with respect to a common share will be required to include the amount of such distribution in gross income as a dividend (without reduction for any Canadian income tax withheld from such distribution) to the extent of our current or accumulated "earnings and profits", as computed for U.S. federal income tax purposes. A dividend generally will be taxed to a U.S. Holder at ordinary income tax rates if we are a PFIC for the tax year of such distribution or were a PFIC for the preceding tax year. To the extent that a distribution exceeds our current and accumulated "earnings and profits", such distribution will be treated first as a tax-free return of capital to the extent of a U.S. Holder's tax basis in the common shares and thereafter as gain from the sale or exchange of such common shares. (See "*Sale or Other Taxable Disposition of Common Shares*" below). However, we do not intend to maintain the calculations of our earnings and profits in accordance with U.S. federal income tax principles, and each U.S. Holder therefore should assume that any distribution by us with respect to our common shares will constitute ordinary dividend income. Dividends received on common shares by corporate U.S. Holders generally will not be eligible for the "dividends received deduction". Subject to applicable limitations and provided we are eligible for the benefits of the Canada-U.S. Tax Convention or the common shares are readily tradable on a United States securities market, dividends paid by us to non-corporate U.S. Holders, including individuals, in respect of common shares generally will be eligible for the preferential tax rates applicable to long-term capital gains for dividends, provided certain holding period and other conditions are satisfied, including that we not be classified as a PFIC in the tax year of distribution or in the preceding tax year. The dividend rules are complex, and each U.S. Holder should consult its own tax advisors regarding the application of such rules.

Sale or Other Taxable Disposition of Common Shares

Upon the sale or other taxable disposition of common shares, a U.S. Holder generally will recognize capital gain or loss in an amount equal to the difference between the U.S. dollar value of cash received plus the fair market value of any property received and such U.S. Holder's tax basis in such common shares sold or otherwise disposed of. A U.S. Holder's tax basis in common shares generally will be such U.S. Holder's U.S. dollar cost for such common shares. Gain or loss recognized on such sale or other disposition generally will be long-term capital gain or loss if, at the time of the sale or other disposition, the common shares have been held for more than one year.

Preferential tax rates currently apply to long-term capital gain of a U.S. Holder that is an individual, estate, or trust. There are currently no preferential tax rates for long-term capital gain of a U.S. Holder that is a corporation. Deductions for capital losses are subject to significant limitations under the Code.

Additional Considerations

Receipt of Foreign Currency

The amount of any distribution paid to a U.S. Holder in foreign currency, or on the sale, exchange or other taxable disposition of common shares generally will be equal to the U.S. dollar value of such foreign currency based on the exchange rate applicable on the date of receipt or, if applicable, the date of settlement if the common shares are traded on an established securities market (regardless of whether such foreign currency is converted into U.S. dollars at that time). A U.S. Holder will have a tax basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any U.S. Holder who converts or otherwise disposes of the foreign currency after the date of receipt may have a foreign currency exchange gain or loss that would be treated as ordinary income or loss, and generally will be U.S. source income or loss for foreign tax credit purposes. Different rules apply to U.S. Holders who use the accrual method of tax accounting. Each U.S. Holder should consult its own U.S. tax advisors regarding the U.S. federal income tax consequences of receiving, owning, and disposing of foreign currency.

Foreign Tax Credit

Dividends paid on the common shares will be treated as foreign-source income, and generally will be treated as "passive category income" or "general category income" for U.S. foreign tax credit purposes. Any gain or loss recognized on a sale or other disposition of common shares generally will be United States source gain or loss. Certain U.S. Holders that are eligible for the benefits of Canada-U.S. Tax Convention may elect to treat such gain or loss as Canadian source gain or loss for U.S. foreign tax credit purposes. The Code applies various complex limitations on the amount of foreign taxes that may be claimed as a credit by U.S. taxpayers. In addition, Treasury Regulations that apply to taxes paid or accrued (the "Foreign Tax Credit Regulations") impose additional requirements for Canadian withholding taxes to be eligible for a foreign tax credit, and there can be no assurance that those requirements will be satisfied. The Treasury Department has released guidance temporarily pausing the application of certain of the Foreign Tax Credit Regulations.

Subject to the PFIC rules and the Foreign Tax Credit Regulations, each as discussed above, a U.S. Holder that pays (whether directly or through withholding) Canadian income tax with respect to dividends paid on the common shares generally will be entitled, at the election of such U.S. Holder, to receive either a deduction or a credit for such Canadian income tax. Generally, a credit will reduce a U.S. Holder's U.S. federal income tax liability on a dollar-for-dollar basis, whereas a deduction will reduce a U.S. Holder's income that is subject to U.S. federal income tax. 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. The foreign tax credit rules are complex and involve the application of rules that depend on a U.S. Holder's particular circumstances. Accordingly, each U.S. Holder should consult its own U.S. tax advisor regarding the foreign tax credit rules.

Backup Withholding and Information Reporting

Under U.S. federal income tax law and Treasury Regulations, certain categories of U.S. Holders must file information returns with respect to their investment in, or involvement in, a foreign corporation. For example, U.S. return disclosure obligations (and related penalties) are imposed on individuals who are U.S. Holders that hold certain specified foreign financial assets in excess of certain threshold amounts. The definition of specified foreign financial assets includes not only financial accounts maintained in foreign financial institutions, but also, unless held in accounts maintained by a financial institution, 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 non-U.S. entity. U.S. Holders may be subject to these reporting requirements unless their common shares are held in an account at certain financial institutions. Penalties for failure to file certain of these information returns are substantial. U.S. Holders should consult their own tax advisors regarding the requirements of filing information returns, including the requirement to file an IRS Form 8938.

Payments made within the U.S. or by a U.S. payor or U.S. middleman, of dividends on, and proceeds arising from the sale or other taxable disposition of common shares will generally be subject to information reporting and backup withholding tax if a U.S. Holder (a) fails to furnish such U.S. Holder's correct U.S. taxpayer identification number (generally on IRS Form W-9), (b) furnishes an incorrect U.S. taxpayer identification number, (c) is notified by the IRS that such U.S. Holder has previously failed to properly report items subject to backup withholding tax, or (d) fails to certify, under penalty of perjury, that such U.S. Holder has furnished its correct U.S. taxpayer identification number and that the IRS has not notified such U.S. Holder that it is subject to backup withholding tax. However, certain exempt persons generally are excluded from these information reporting and backup withholding rules. Backup withholding is not an additional tax. Any amounts withheld under the U.S. backup withholding tax rules will be allowed as a credit against a U.S. Holder's U.S. federal income tax liability, if any, or will be refunded, if such U.S. Holder furnishes required information to the IRS in a timely manner.

The discussion of reporting requirements set forth above is not intended to constitute a complete description of all reporting requirements that may apply to a U.S. Holder. A failure to satisfy certain reporting requirements may result in an extension of the time period during which the IRS can assess a tax, and under certain circumstances, such an extension may apply to assessments of amounts unrelated to any unsatisfied reporting requirement. Each U.S. Holder should consult its own tax advisors regarding the information reporting and backup withholding rules.

THE ABOVE SUMMARY IS NOT INTENDED TO CONSTITUTE A COMPLETE ANALYSIS OF ALL TAX CONSIDERATIONS APPLICABLE TO U.S. HOLDERS WITH RESPECT TO THE ACQUISITION, OWNERSHIP AND DISPOSITION OF COMMON SHARES. U.S. HOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE TAX CONSIDERATIONS APPLICABLE TO THEM IN LIGHT OF THEIR OWN PARTICULAR CIRCUMSTANCES.

LEGAL MATTERS

The validity of the securities being offered hereby is being passed upon for us by McCarthy Tétrault LLP, Toronto, Ontario, with respect to matters of Canadian law and Dorsey & Whitney LLP, Vancouver, British Columbia and Denver, Colorado with respect to matters of U.S. law. Certain legal matters will be passed upon for A.G.P./Alliance Global Partners by Thompson Hine LLP New York, New York.

EXPERTS

The consolidated financial statements of Aptose Biosciences Inc. as of December 31, 2023 and 2022 and for the years then ended have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing. The audit report covering the December 31, 2023 consolidated financial statements contains an explanatory paragraph that states that the Company's recurring losses from operations and net capital deficiency raise substantial doubt about the entity's ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of that uncertainty.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934 and, accordingly, we file reports with and furnish other information to the SEC. This prospectus forms part of a registration statement we have filed with the SEC relating to, among other things, the common shares. As permitted by SEC rules, this prospectus does not contain all of the information contained in the registration statement that we filed. For further information regarding us and the securities covered by this prospectus, you may desire to review the full registration statement, including its exhibits. The registration statement, including its exhibits, as well as the documents that we file with the SEC, may be inspected and copied at the public reference facilities maintained by the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling 1-800-SEC-0330. Copies of such materials are also available by mail from the Public Reference Branch of the SEC at 100 F Street, N.E., Washington, D.C. 20549 at prescribed rates. In addition, the SEC maintains a website (http://www.sec.gov) from which interested persons can electronically access the registration statement, including the exhibits to the registration statement.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" information we file with the SEC. This means that we can disclose important information to you by referring you to those documents.

We incorporate by reference into this prospectus the documents listed below:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2023 filed with the SEC on March 26, 2024, as amended and filed with the SEC on April 29, 2024;
- Quarterly Reports on Form 10-Q filed with the SEC on May 14, 2024, August 8, 2024, and November 12, 2024;
- Our definitive proxy statements on Schedule 14A filed on May 14, 2024, July 17, 2024, and December 30, 2024;
- Our Current Reports on Form 8-K filed with the SEC on January 30, 2024, March 1, 2024, April 5, 2024, April 26, 2024, May 1, 2024, May 31, 2024, June 3, 2024, June 20, 2024, July 19, 2024, August 30, 2024, September 6, 2024, October 4, 2024, and November 25, 2024; and

The description of our common shares set forth under the heading "Additional Information—Common Shares" contained in our Annual Report on Form 20-F for the fiscal year end May 31, 2014, filed with the SEC on July 30, 2014, and incorporated by reference into our Registration Statement on Form 8-A, as filed with the SEC on October 21,2014, including any amendment or report to such Registration Statement on Form8-A filed for the purpose of amending such description.

In addition, all documents filed by us under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, after the date of this prospectus but before the termination of the offering of the securities covered by this prospectus, are hereby incorporated by reference into this prospectus.

We have not authorized anyone to provide you with any different or additional information other than that contained in or incorporated by reference into this prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any information that others may provide.

Any statement contained in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

The documents incorporated by reference into this prospectus are available from us upon request. We will provide a copy of any and all of the information that is incorporated by reference into this prospectus to any person, including a beneficial owner, to whom a prospectus is delivered, without charge, upon written or oral request. If exhibits to the documents incorporated by reference into this prospectus are not themselves specifically incorporated by reference in this prospectus, then the exhibits will not be provided.

Requests for any of these documents should be directed to:

Investor Relations
Aptose Biosciences Inc.
66 Wellington Street West Suite 5300
TD Bank Tower Box 48
Toronto, Ontario M5K 1E6
(858) 926-2730

Filed Pursuant to Rule 424(b)(2)
Registration No. 333-267801

$200,000,000

Common Shares

Warrants

Units

We may offer and issue from time to time common shares or warrants or any combination of those securities, either individually or in units, up to an aggregate initial offering price of $200,000,000, in one or more transactions under this prospectus. The securities may be offered in amounts, at prices and on terms to be determined based on market conditions at the time of sale and set forth in an accompanying prospectus supplement.

This prospectus provides you with a general description of the securities that we may offer. Each time we offer securities, we will provide you with a prospectus supplement that describes specific information about the particular securities being offered and may add, update or change information contained or incorporated by reference in this prospectus. You should read both this prospectus and the applicable prospectus supplement, together with the additional information that is incorporated by reference into this prospectus and the applicable prospectus supplement.

Our common shares are listed on the Nasdaq Capital Market ("NASDAQ") under the symbol "APTO" and on the Toronto Stock Exchange under the symbol "APS". On October 20, 2022, the closing price of our common shares on NASDAQ was $0.48 per share and on the Toronto Stock Exchange was C$0.66 per share.

Investing in our securities involves a high degree of risk. You should carefully read the "Risk Factors" section of this prospectus beginning on page 2.

These securities have not been approved or disapproved by the Securities and Exchange Commission ("SEC") or any state securities regulatory authority, nor has the SEC or any state securities regulatory authority passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is October 21, 2022.

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ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement that we have filed with the SEC utilizing a "shelf" registration process. Under this shelf registration process, we may sell any combination of the securities described in this prospectus, either individually or in units, in one or more offerings up to an aggregate initial offering price of $200,000,000.

This prospectus provides you with a general description of the securities that we may sell under this prospectus. Each time we sell securities, we may also provide a prospectus supplement that may include, where applicable, specific information about the terms of that offering. If there is any inconsistency between the information in this prospectus and any applicable prospectus supplement, you should rely on the information in the prospectus supplement. Where required by statute, regulation or policy, and where securities are offered in currencies other than U.S. dollars, appropriate disclosure of foreign exchange rates applicable to those securities will be included in the prospectus supplement describing those securities.

We may also prepare free writing prospectuses to describe the terms of particular sales of securities, which terms may vary from those described in any prospectus supplement. You therefore should carefully review any free writing prospectus in connection with your review of this prospectus and any applicable prospectus supplement.

Please carefully read both this prospectus and any prospectus supplement, together with the documents incorporated by reference into this prospectus and any prospectus supplement, and the additional information described below under "Where You Can Find Additional Information". This prospectus contains summaries of certain provisions contained in some of the documents described in this prospectus, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to in this prospectus have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under "Where You Can Find Additional Information".

You should rely only on the information contained in or incorporated by reference into this prospectus and any prospectus supplement. We have not authorized anyone to provide you with different information. The distribution or possession of this prospectus in or from certain jurisdictions may be restricted by law. This prospectus is not an offer to sell any securities and is not soliciting an offer to buy securities in any jurisdiction where the offer or sale is not permitted or where the person making the offer or sale is not qualified to do so or to any person to whom it is not permitted to make such offer or sale. The information contained in this prospectus is accurate only as of the date of this prospectus and any information incorporated by reference into this prospectus is accurate only as of the date of the applicable document incorporated by reference, regardless of the time of delivery of this prospectus or of any sale of the securities. Our business, financial condition, results of operations and prospects may have changed since that date.

As used in this prospectus and in any prospectus supplement, unless the context otherwise requires, the terms "Aptose," the "Company," "we," "us," and "our" refer to Aptose Biosciences Inc., and, unless the context requires otherwise, the subsidiaries through which it conducts business.

The complete mailing address and telephone number of our principal executive officers is:

Aptose Biosciences Inc.
251 Consumers Road, Suite 1105
Toronto, Ontario, Canada M2J 4R3
(647) 479-9828

Unless stated otherwise or if the context otherwise requires, all references to dollar amounts in this prospectus and any prospectus supplement are references to U.S. dollars.

RISK FACTORS

An investment in our securities involves a significant degree of risk. You should carefully consider the risk factors and all of the other information included in this prospectus, any prospectus supplement, the documents we have incorporated by reference into this prospectus and any prospectus supplement, and in any related free writing prospectus, including those in Item 1A "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, as updated by annual, quarterly and other reports and documents we file with the SEC after the date of this prospectus and that are incorporated by reference into this prospectus, in evaluating an investment in our securities. If any of these risks were actually to occur, our business, financial condition or results of operations could be materially adversely affected. When we offer and sell any securities pursuant to a prospectus supplement, we may include in the applicable prospectus supplement additional risk factors relevant to those securities.

FORWARD-LOOKING STATEMENTS

This prospectus, including the documents incorporated by reference herein, contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 and "forward-looking information" within the meaning of applicable Canadian securities law. We refer to such forward-looking statements and forward-looking information collectively as "forward-looking statements". These statements relate to future events or future performance and reflect our expectations and assumptions regarding our growth, results of operations, performance and business prospects and opportunities. Such forward-looking statements reflect our current beliefs and are based on information currently available to us. In some cases, forward-looking statements can be identified by terminology such as "may", "would", "could", "will", "should", "expect", "plan", "intend", "anticipate", "believe", "estimate", "predict", "potential", "continue" or the negative of these terms or other similar expressions concerning matters that are not historical facts.

The forward-looking statements in this prospectus and, including any documents incorporated by reference herein, include, among others, statements regarding our future operating results, economic performance and product development efforts and statements in respect of: The forward-looking statements contained in this prospectus and in the documents incorporated by reference reflect our current views with respect to future events, are subject to significant risks and uncertainties, and are based upon a number of estimates and assumptions that, while considered reasonable by us, are inherently subject to significant business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause our actual results, performance or achievements to be materially different from any future results, performance, or achievements that may be expressed or implied by such forward-looking statements, including, among others:

- our lack of product revenues and net losses and a history of operating losses;
- our early stage of development, particularly the inherent risks and uncertainties associated with (i) developing new drug candidates generally, (ii) demonstrating the safety and efficacy of these drug candidates in clinical studies in humans, and (iii) obtaining regulatory approval to commercialize these drug candidates;
- our need to raise substantial additional capital in the future and that we may be unable to raise such funds when needed and on acceptable terms;
- further equity financing, which may substantially dilute the interests of our existing shareholders;
- clinical studies and regulatory approvals of our drug candidates are subject to delays, and may not be completed or granted on expected timetables, if at all, and such delays may increase our costs and could substantially harm our business;
- our reliance on external contract research/manufacturing organizations for certain activities and if we are subject to quality, cost, or delivery issues with the preclinical and clinical grade materials supplied by contract manufacturers, our business operations could suffer significant harm;
- clinical studies are long, expensive and uncertain processes and the United States Food and Drug Administration, or "FDA", or other similar foreign regulatory agency that we are required to report to, may ultimately not approve any of our product candidates;
- our operations could be adversely affected by events outside of our control, such as natural disasters, wars or health crises such as the COVID-19 pandemic;

- our ability to comply with applicable governmental regulations and standards;
- our inability to achieve our projected development goals in the time frames we announce and expect;
- difficulties in enrolling patients for clinical trials may lead to delays or cancellations of our clinical trials;
- our reliance on third-parties to conduct and monitor our preclinical studies;
- our ability to attract and retain key personnel, including key executives and scientists;
- any misconduct or improper activities by our employees;
- our exposure to exchange rate risk;
- our ability to commercialize our business attributed to negative results from clinical trials;
- the marketplace may not accept our products or product candidates due to the intense competition and technological change in the biotechnical and pharmaceuticals, and we may not be able to compete successfully against other companies in our industries and achieve profitability;
- our ability to obtain and maintain patent protection;
- our ability to afford substantial costs incurred with defending our intellectual property;
- our ability to protect our intellectual property rights and not infringe on the intellectual property rights of others;
- our business is subject to potential product liability and other claims;
- potential exposure to legal actions and potential need to take action against other entities;
- commercialization limitations imposed by intellectual property rights owned or controlled by third parties;
- our ability to maintain adequate insurance at acceptable costs;
- our ability to find and enter into agreements with potential partners;
- extensive government regulation;
- data security incidents and privacy breaches could result in increased costs and reputational harm;
- our share price has been and is likely to continue to be volatile;
- future sales of our common shares by us or by our existing shareholders could cause our share price to drop;
- changing global market and financial conditions;
- changes in an active trading market in our common shares; difficulties bynon-Canadian investors to obtain and enforce judgments against us because of our Canadian incorporation and presence;
- potential adverse U.S. federal tax consequences for U.S. shareholders because we are a “passive foreign investment company”;
- our “smaller reporting company” status;
- any failures to maintain an effective system of internal controls may result in material misstatements of our financial statements, or cause us to fail to meet our reporting obligations or fail to prevent fraud;
- our broad discretion in how we use the proceeds of the sale of common shares;
- our ability to expand our business through the acquisition of companies or businesses; and
- other risks detailed from time-to-time in our on-going filings with the SEC and Canadian securities regulators, and those which are discussed under the heading “Risk Factors” in this prospectus and in the documents incorporated by reference.

Should one or more of these risks or uncertainties materialize, or should the assumptions described in the sections entitled “Risk Factors” in this prospectus and in the documents incorporated by reference underlying those forward-looking statements prove incorrect, actual results may vary materially from those described in the forward-looking statements.

More detailed information about these and other factors is included in this prospectus under the section entitled “Risk Factors” and in the documents incorporated by reference into this prospectus. Although we have attempted to identify factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. Forward-looking statements are based upon our beliefs, estimates and opinions at the time they are made and we undertake no obligation to update forward-looking statements if these beliefs, estimates and opinions or circumstances should change, except as required by applicable law. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking statements.

Forward-looking statements contained in this prospectus are made as of the date of this prospectus. Forward-looking statements made in a document incorporated by reference into this prospectus are made as of the date of the original document and have not been updated by us except as expressly provided for in this prospectus.

Except as required under applicable securities legislation, we undertake no obligation to publicly update or revise forward-looking statements, whether as a result of new information, future events or otherwise. **We qualify all the forward-looking statements contained in this prospectus and the documents incorporated by reference in this prospectus by the foregoing cautionary statements.**

ENFORCEABILITY OF CIVIL LIABILITIES

We are incorporated under the laws of Canada. Many of our directors and officers and the experts named in this prospectus are residents of countries other than the United States, and all or a substantial portion of their assets and some of our assets are located outside the United States. We have appointed Aptose Biosciences U.S. Inc. as our agent for service of process in the United States, but it may be difficult for holders of securities who reside in the United States to effect service within the United States upon those directors, officers and experts who are not residents of the United States. Additionally, it may not be possible for you to enforce judgments obtained in U.S. courts based upon the civil liability provisions of the U.S. federal securities laws or other laws of the United States. In addition, there is doubt as to whether an original action could be brought in Canada against us or our directors or officers based solely upon U.S. federal or state securities laws and as to the enforceability in Canadian courts of judgments of U.S. courts obtained in actions based upon the civil liability provisions of U.S. federal or state securities laws.

APTOSE BIOSCIENCES INC.

This summary does not contain all the information about us that may be important to you. Please carefully read both this prospectus and any prospectus supplement together with the additional information contained in or incorporated by reference into this prospectus and any prospectus supplement.

Aptose Biosciences Inc. is a science-driven biotechnology company advancing first-in-class targeted agents to treat life-threatening cancers, such as acute myeloid leukemia ("AML"), high-risk myelodysplastic syndromes ("MDS"), chronic lymphocytic leukemia ("CLL") and other hematologic malignancies. Based on insights into the genetic and epigenetic profiles of certain cancers and patient populations, Aptose is building a pipeline of novel oncology therapies directed at dysregulated processes and signaling pathways. Aptose is developing targeted medicines for precision treatment of these diseases to optimize efficacy and quality of life by minimizing the side effects associated with conventional therapies. We currently have in development two molecules: luxeptinib (CG-806), and HM43239, both being evaluated for safety, tolerability, pharmacokinetics and signals of efficacy in Phase 1 clinical trials, and a third clinical asset available for partnering (APTO-253). Each molecule is described below.

HM43239 is an oral potent myeloid kinase inhibitor, targeting a constellation of kinases operative in myeloid malignancies and known to be involved in tumor proliferation, resistance to therapy, and differentiation. HM43239 is currently being evaluated in an international Phase 1/2 dose-escalation clinical trial designed to assess the safety, tolerability, pharmacokinetics and pharmacodynamic responses of HM43239 as a single agent in patients with relapsed or refractory AML.

Luxeptinib is a novel, oral, highly potent lymphoid and myeloid kinase inhibitor that selectively targets defined clusters of kinases operative in myeloid and lymphoid hematologic malignancies. This small molecule anticancer agent is currently being evaluated in a Phase 1a/b study for the treatment of patients having B-cell malignancies including classic CLL, small lymphocytic lymphoma and certain non-Hodgkin's lymphomas that are resistant/refractory/intolerant to other therapies. Under a separate Investigational New Drug, luxeptinib is being evaluated in a Phase 1a/b study for the treatment of patients with relapsed/refractory AML or high risk MDS. It is hoped luxeptinib can serve patients across lymphoid and myeloid malignancies and combine well with other agents to extend its application to multiple lines of therapy.

APTO-253 is a small molecule MYC oncogene inhibitor at the Phase 1a/b clinical trial stage of development for the treatment of patients with relapsed or refractory blood cancers, including AML and high-risk MDS. The clinical program was discontinued effective December 20, 2021, following a prioritization of the Company's other more advanced pipeline assets. We were incorporated under the *Business Corporations Act* (Ontario) on September 5, 1986 under the name RML Medical Laboratories Inc. On October 28, 1991, we amalgamated with Mint Gold Resources Ltd., which caused us to become a reporting issuer in Ontario. On August 25, 1992, we changed our name to IMUTEC Corporation. On November 27, 1996, we changed our name to Imutec Pharma Inc., and on November 19, 1998, we changed our name to Lorus Therapeutics Inc. On October 1, 2005, we continued under the *Canada Business Corporations Act* and on July 10, 2007 we completed a plan of arrangement and corporate reorganization with, among others, 6650309 Canada Inc., 6707157 Canada Inc. and Pinnacle International Lands, Inc. On May 25, 2010, we consolidated our outstanding common shares on the basis of one post-consolidation common share for each 30 pre-consolidation common shares.

On August 28, 2014 we changed our name from Lorus Therapeutics Inc. to Aptose Biosciences Inc. and on October 1, 2014 we consolidated our outstanding common shares on the basis of one post-consolidation common share for each twelve pre-consolidation common shares.

We have two subsidiaries: Aptose Biosciences U.S. Inc., a corporation incorporated under the laws of Delaware; and NuChem Pharmaceuticals Inc., a corporation incorporated under the laws of Ontario, Canada. Aptose Biosciences Inc. owns 100% of the issued and outstanding voting share capital of Aptose Biosciences U.S. Inc., and 80% of the issued and outstanding voting share capital of NuChem Pharmaceuticals Inc.

Our head, registered and records office is located at 251 Consumers Road, Suite 1105, Toronto, Ontario, Canada, M2J 4R3. Our executive office is located at 12770 High Bluff Drive, Suite 120, San Diego, CA 92130. We maintain a website at www.aptose.com. Information contained on our website is not part of this prospectus.

USE OF PROCEEDS

Unless otherwise specified in a prospectus supplement, the net proceeds that we receive from the sale of our securities will be used for working capital and general corporate purposes, including, but not limited to, progressing our research and development programs, and supporting our clinical programs and manufacturing activities.

More specific allocations may be included in a prospectus supplement relating to a specific offering of securities. All expenses relating to an offering of securities and any compensation paid to underwriters, dealers or agents, as the case may be, will be paid out of our general funds, unless otherwise stated in the applicable prospectus supplement.

DESCRIPTION OF SHARE CAPITAL

The descriptions below of our share capital, warrants and related information are summaries and are qualified by reference to documents incorporated by reference to the registration statement of which this prospectus is a part.

Authorized Capital

Our authorized share capital consists of an unlimited number of common shares, no par value, of which 92,294,734 were issued and outstanding as at October 20, 2022. None of our common shares are held by us or on our behalf.

Common Shares

The holders of our common shares are entitled to receive notice of and to attend and vote at all annual and special meetings of our shareholders. Our common shares carry one vote per common share and do not have cumulative voting rights. The holders of our common shares are entitled, at the discretion of our board of directors, to receive out of any or all of our profits or surplus properly available for the payment of dividends, any dividend declared by the board of directors and payable by us on our common shares. The holders of our common shares will participate on a pro rata basis in any distribution of our remaining property upon our liquidation, dissolution or winding-up or any other return of capital or distribution of our assets among our shareholders for the purpose of winding up our affairs.

Dividend Policy

We have not paid any dividends since our incorporation. At the discretion of our board of directors, we will consider paying dividends in the future as our operational circumstances may permit, having regard to, among other things, our earnings, cash flow and financial requirements. It is the current policy of our board of directors to retain all earnings to finance our business plan.

Description of Warrants

The following description of the terms of warrants provides some general terms and provisions of warrants in respect of which a prospectus supplement may be filed. This summary is not complete. The particular terms and provisions of warrants offered by any prospectus supplement, and the extent to which the general terms and provisions described below may apply to them, will be described in the applicable prospectus supplement. Warrants may be offered separately or in combination with common shares.

The description of general terms and provisions of warrants described in any prospectus supplement will include, but is not limited to, where applicable:

- the designation and aggregate number of warrants offered;
- the price at which the warrants will be offered;
- the currency or currencies in which the warrants are denominated;
- the number of common shares that may be purchased on the exercise of the warrants and conditions and procedures that will result in an adjustment of that number;
- the exercise price of the warrants and the dates or periods during which the warrants are exercisable;
- any minimum or maximum amount of warrants that may be exercised at any one time;
- any terms, procedures and limitations relating to the transferability, exchange or exercise of the warrants; and
- any other material terms of the warrants.

If the warrants are issued pursuant to warrant agreements or warrant indentures, we will so specify in the prospectus supplement relating to the warrants being offered pursuant to the prospectus supplement. We will file any warrant agreement or warrant indenture with the SEC and incorporate them by reference as an exhibit to the registration statement of which this prospectus is a part, on or before the time we issue a series of warrants.

Each warrant will entitle the holder to acquire such number of common shares at such exercise price and in accordance with such terms as shall in each case be set forth in, or be determinable as set forth in, the prospectus supplement relating to the warrants offered by the prospectus supplement. Warrants may be exercised at any time up to the close of business on the expiration date set forth in the prospectus supplement relating to the warrants offered thereby. After the close of business on the expiration date, unexercised warrants will become void.

The warrants may be exercised as set forth in the prospectus supplement relating to the warrants offered thereby. Upon receipt of payment and the taking of other action specified in the applicable prospectus supplement, we will, as soon as practicable, forward the securities purchasable upon exercise. If less than all of the warrants represented by such warrant certificate are exercised, a new warrant certificate will be issued for the remaining warrants.

Before the exercise of their warrants, holders of warrants will not have any of the rights of holders of common shares. Therefore, holders of warrants will not be entitled, by virtue of being such holders, to vote, consent, receive dividends, receive notice as shareholders with respect to any meeting of shareholders for the election of our directors or any other matter, or to exercise any rights whatsoever as our shareholders. We reserve the right to include in a prospectus supplement specific terms of the warrants that are not within the options and parameters described in this prospectus. In addition, to the extent that any particular terms of the warrants described in a prospectus supplement differ from any of the terms described in this prospectus, the description of those terms included in this prospectus shall be deemed to have been superseded by the description of the differing terms set forth in such prospectus supplement with respect to such warrants.

Description of Units

We may issue units comprised of one or more of the securities described in this prospectus in any combination. Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement, if any, under which a unit is issued may provide that the securities comprising the unit may not be held or transferred separately, at any time or at any time before a specified date.

The particular terms and provisions of units offered by any prospectus supplement, and the extent to which the general terms and provisions described below may apply thereto, will be described in the prospectus supplement filed in respect of such units. This description will include, where applicable:

- the designation and aggregate number of units offered;
- the price at which the units will be offered;
- the currency or currencies in which the units are denominated;

- the terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- the number of securities that may be purchased upon exercise of each unit and the price at which the currency or currencies in which that amount of securities may be purchased upon exercise of each unit;
- any provisions for the issuance, payment, settlement, transfer, adjustment or exchange of the units or of the securities comprising the units; and
- any other material terms of the units.

We reserve the right to set forth in a prospectus supplement specific terms of the units that are not within the options and parameters set forth in this prospectus. In addition, to the extent that any particular terms of the units described in a prospectus supplement differ from any of the terms described in this prospectus, the description of such terms set forth in this prospectus shall be deemed to have been superseded by the description of the differing terms set forth in such prospectus supplement with respect to such units.

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in any applicable prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, or DTC, as depositary, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depositary to its nominee or by the nominee to the depositary, or by the depositary or its nominee to a successor depositary or to a nominee of the successor depositary.

DTC has advised us that it is:

- a limited-purpose trust company organized under the New York Banking Law;
- a "banking organization" within the meaning of the New York Banking Law;
- a member of the Federal Reserve System;
- a "clearing corporation" within the meaning of the New York Uniform Commercial Code; and
- a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants' accounts, thereby eliminating the need for physical movement of securities certificates. "Direct participants" in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC's records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants' records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC's records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depositary and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depositary or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below and unless if otherwise provided in the description of the applicable securities herein or in the applicable prospectus supplement, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depositary with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depositary is not obtained, securities certificates are required to be printed and delivered.

As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

- DTC notifies us that it is unwilling or unable to continue as a depositary for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Securities Exchange Act of 1934 at a time when it is required to be registered and a successor depositary is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;
- we determine, in our sole discretion, not to have such securities represented by one or more global securities; or
- an event of default has occurred and is continuing with respect to such series of securities,

we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities. Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depositary directs. It is expected that these directions will be based upon directions received by the depositary from its participants with respect to ownership of beneficial interests in the global securities.

Euroclear, Clearstream and CDS

If so provided in the applicable prospectus supplement, you may hold interests in a global security through the Canadian Depository for Securities, which we refer to as "CDS", Clearstream Banking S.A., which we refer to as "Clearstream," or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as "Euroclear," either directly if you are a participant in CDS, Clearstream or Euroclear or indirectly through organizations which are participants in CDS, Clearstream or Euroclear. CDS, Clearstream and Euroclear will hold interests on behalf of their respective participants through customers' securities accounts in the names of CDS, Clearstream and Euroclear, respectively, on the books of their respective U.S. depositaries (if applicable), which in turn will hold such interests in customers' securities accounts in such depositaries' names on DTC's books.

CDS, Clearstream and Euroclear are securities clearance systems in Canada (CDS) and Europe (Clearstream and Euroclear). CDS, Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through CDS, Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in CDS, Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC's rules and procedures.

Investors will be able to make and receive through CDS, Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in CDS, Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC's rules on behalf of CDS, Euroclear or Clearstream, as the case may be, by their respective U.S. depositaries (if applicable); however, such cross-market transactions will require delivery of instructions to CDS, Euroclear or Clearstream, as the case may be, by the counterparty in such system in accordance with the rules and procedures and within the established deadlines (if applicable) of such system. CDS, Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements and if applicable, deliver instructions to its U.S. depositary to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving payment in accordance with normal procedures for same-day fund settlement. If applicable, participants in CDS, Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositaries.

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as a result of sales of interests in a global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC's settlement date.

Other

The information in this section of this prospectus concerning DTC, CDS, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, CDS, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, CDS, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, CDS, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we nor any agent of ours will have any responsibility for the performance or nonperformance by DTC, CDS, Clearstream and Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

PLAN OF DISTRIBUTION

We may sell securities to or through underwriters or dealers, and also may sell securities to one or more other purchasers directly or through agents, including sales pursuant to ordinary brokerage transactions and transactions in which a broker-dealer solicits purchasers. Underwriters may sell securities to or through dealers. Each prospectus supplement for a particular offering of securities will set forth the terms of the offering, including:

- the name or names of any underwriters, dealers, or agents;
- the purchase price of, and form of consideration for, the securities and the proceeds to us;
- any delayed delivery arrangements;
- any underwriting commissions, fees, discounts and other items constituting underwriters' compensation;
- the offering price for the securities (or the manner of determination of the offering price if offered on anon-fixed price basis);
- any discounts or concessions allowed or re-allowed or paid to dealers;
- the expected delivery date of the sale of the offered securities; and
- any securities exchanges on which the securities may be listed.

The securities may be sold, from time to time, in one or more transactions at a fixed price or prices that may be changed or at market prices prevailing at the time of sale, at prices related to such prevailing market prices, at varying prices determined at the time of sale, or at negotiated prices, including sales made directly on NASDAQ or other existing trading markets for the securities. We may engage in at-the-market offerings of our securities. The prices at which the securities may be offered may vary as between purchasers and during the period of distribution. If, in connection with the offering of securities at a fixed price or prices, the underwriters have made a *bona fide* effort to sell all of the securities at the initial offering price fixed in the applicable prospectus supplement, the public offering price may be decreased and thereafter further changed, from time to time, to an amount not greater than the initial public offering price fixed in such prospectus supplement, in which case the compensation realized by the underwriters will be decreased by the amount that the aggregate price paid by purchasers for the securities is less than the gross proceeds paid by the underwriters to us.

Underwriters, dealers and agents who participate in the distribution of the securities may be entitled under agreements to be entered into with us to indemnification by us against certain liabilities, including liabilities under the Securities Act of 1933, or to contribution with respect to payments that such underwriters, dealers or agents may be required to make in respect thereof. Such underwriters, dealers and agents may be customers of, engage in transactions with, or perform services for us in the ordinary course of business.

In connection with any offering of securities, other than anat-the-market offering, the underwriters may over-allot or effect transactions that stabilize or maintain the market price of the securities offered at a level above that which might otherwise prevail in the open market. Such transactions, if commenced, may be discontinued at any time.

MATERIAL INCOME TAX CONSIDERATIONS

The applicable prospectus supplement may describe material U.S. federal income tax consequences of the acquisition, ownership and disposition of any of the securities offered by this prospectus by an investor who is subject to U.S. federal taxation.

The applicable prospectus supplement may also describe material Canadian federal income tax considerations generally applicable to investors described therein of purchasing, holding and disposing of the applicable securities, including, in the case of an investor who is not a resident of Canada, Canadian non-resident withholding tax considerations.

LEGAL MATTERS

Unless otherwise specified in a prospectus supplement, certain legal matters relating to the securities will be passed upon for us by Dorsey & Whitney LLP, Vancouver, B.C., and Denver, Colorado, with respect to matters of United States law, and McCarthy Tétrault LLP, Toronto, Ontario, with respect to matters of Canadian law.

EXPERTS

Our consolidated financial statements as of December 31, 2021 and December 31, 2020 and for each of the years in thetwo-year period ended December 31, 2021, have been audited by KPMG LLP as set forth in their report dated March 22, 2022 thereon and incorporated herein by reference.

Such consolidated financial statements have been incorporated by reference herein in reliance upon the report of KPMG LLP, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We are subject to the information requirements of the Securities Exchange Act of 1934 and, accordingly, we file reports with and furnish other information to the SEC. We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933 with respect to the securities offered by this prospectus. This prospectus does not contain all of the information contained in the registration statement that we filed. For further information regarding us and the securities covered by this prospectus, you may desire to review the full registration statement, including its exhibits. The registration statement, including its exhibits, as well as the documents that we file with the SEC, may be inspected and copied at the public reference facilities maintained by the SEC at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may obtain information on the operation of the public reference room by calling 1-800-SEC-0330. Copies of such materials are also available by mail from the Public Reference Branch of the SEC at 100 F Street, N.E., Washington, D.C. 20549 at prescribed rates. In addition, the SEC maintains a website (http://www.sec.gov) from which interested persons can electronically access the registration statement, including the exhibits to the registration statement.

INCORPORATION BY REFERENCE

The SEC allows us to "incorporate by reference" information we file with the SEC. This means that we can disclose important information to you by referring you to those documents.

We incorporate by reference into this prospectus the documents listed below:

(a) our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on March 22, 2022;

(b) our Definitive Proxy Statement on Schedule 14A for our 2022 Annual Meeting of the Shareholders held on May 31, 2022, filed with the SEC on April 20, 2022;

(c) our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2022 and June 30, 2022, filed with the SEC on, respectively, May 9, 2022 and August 2, 2022;

(d) our Current Reports on Form 8-K filed on April 11, 2022, May 2, 2022, May 31, 2022, June 28, 2022, July 22, 2022, and September 16, 2022; and

(e) the description of our common shares contained in Exhibit 4.1 to our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on March 22, 2022, including any amendments or reports for the purpose of amending such description.

In addition, all documents filed by us under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, after the date of this prospectus but before the termination of the offering of the securities covered by this prospectus, are hereby incorporated by reference into this prospectus.

We have not authorized anyone to provide you with any different or additional information other than that contained in or incorporated by reference into this prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any information that others may provide.

Any statement contained in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or any other subsequently filed document that is deemed to be incorporated by reference into this prospectus modifies or supersedes the statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

The documents incorporated by reference into this prospectus are available from us upon request. We will provide a copy of any and all of the information that is incorporated by reference into this prospectus to any person, including a beneficial owner, to whom a prospectus is delivered, without charge, upon written or oral request. If exhibits to the documents incorporated by reference into this prospectus are not themselves specifically incorporated by reference in this prospectus, then the exhibits will not be provided.

Requests for any of these documents should be directed to:

Investor Relations
Aptose Biosciences Inc.
251 Consumers Road, Suite 1105
Toronto, Ontario, Canada M2J 4R3
(647) 479-9828

$1,000,000

Common Shares

PROSPECTUS SUPPLEMENT

A.G.P.

February 3, 2025