

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

FORM F-3
REGISTRATION STATEMENT
UNDER THE SECURITIES ACT OF 1933

APTOSE BIOSCIENCES INC.
(Exact name of Registrant as Specified in its Charter)

Canada
(State or other jurisdiction of Incorporation or Organization)

N/A
(I.R.S. Employer Identification No.)

2 Meridian Road
Toronto, Ontario
M9W 4Z7
(416) 798-1200
(Address and Telephone Number of Principal Executive Offices)

Aptose Biosciences U.S. Inc.
12770 High Bluff Drive, Suite 120
San Diego, California
92130
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

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Gregory K. Chow
Chief Financial Officer
Aptose Biosciences Inc.
2 Meridian Road
Toronto, Ontario
Canada M9W 4Z7

Approximate date of commencement of proposed sale to the public: **From time to time after the effective date of this registration statement**

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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

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

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

If this Form is a registration statement pursuant to General Instruction I.C. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.C. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered (1)	Proposed maximum offering price per unit (1)	Proposed maximum aggregate offering price (2)	Amount of registration fee
Common Shares				
Warrants				
Units				
Total	\$ 100,000,000		\$ 100,000,000	\$ 11,620

(1) There are being registered under this registration statement such indeterminate number of common shares and warrants to purchase common shares of the registrant (including common shares issuable upon exercise of any warrants) as shall have a proposed maximum aggregate offering price of \$100,000,000. The securities that may be offered pursuant to this registration statement include, pursuant to Rule 416 of the Securities Act of 1933, as amended, such additional number of common shares of the registrant that may become issuable as a result of any stock split, stock dividends or similar event. Any securities registered by this registration statement may be sold separately or as units with other securities registered under this registration statement. The proposed maximum aggregate offering price per security will be determined, from time to time, by the registrant in connection with the sale of the securities under this registration statement.

(2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

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



PART I
INFORMATION REQUIRED IN THE PROSPECTUS

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

Subject to Completion, dated December 1, 2014.



APTOSE BIOSCIENCES INC.

**\$100,000,000
Common Shares
Warrants
Units**

Aptose Biosciences Inc. may offer and sell from time to time up to an aggregate of \$100,000,000 of common shares (issued separately or upon exercise of warrants), warrants and units comprising any combination of common shares and warrants. The specific terms of any securities offered will be described in supplements to this prospectus. You should read this prospectus and any applicable prospectus supplement carefully before you purchase our securities. This prospectus may not be used to offer securities unless accompanied by a prospectus supplement.

We may offer and sell these securities to or through one or more underwriters, dealers and agents, or directly to purchasers, on a continuous or delayed basis. The prospectus supplement for each offering of securities will describe in detail the plan of distribution. If underwriters, dealers and agents are used to sell these securities, we will name them and describe their compensation in a prospectus supplement.

Our outstanding common shares are listed and posted for trading on the Toronto Stock Exchange, which we refer to as the "TSX", under the symbol "APS" and the NASDAQ Capital Market, which we refer to as "NASDAQ", under the symbol "APTO". On December 1, 2014, the last reported sale price of our common shares on the TSX was Cdn\$8.09 per common share and on NASDAQ was \$7.20 per common share. **There is currently no market through which the securities, other than the common shares, may be sold and purchasers may not be able to resell the securities purchased under this prospectus. This may affect the pricing of the securities in the secondary market, the transparency and availability of trading prices, the liquidity of the securities and the extent of issuer regulation. See "Risk Factors".**

The aggregate market value of our outstanding voting and non-voting common equity held by non-affiliates on December 1, 2014, as calculated in accordance with General Instruction I.B.5. of Form F-3, was approximately Cdn\$70,722,036. We have not issued any securities pursuant to Instruction I.B.5 of Form F-3 during the 12 calendar month period that ends on and includes the date hereof.

Our principal executive offices are located at 2 Meridian Road, Toronto, Ontario, Canada M9W 4Z7 (telephone: (416) 798-1200).

Investing in our securities involves risks. Prior to purchasing our securities, you should carefully consider the risk factors that will be described in any applicable prospectus supplement and the risk factors described in our filings with the Securities and Exchange Commission, as explained under the heading "Risk Factors" on page 3 of this prospectus.

Neither the SEC, nor any securities commission of any state of the United States or any Canadian securities regulator has approved or disapproved the securities offered hereby or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offence.

The date of this prospectus is _____, 2014.

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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 the securities described in this prospectus in one or more offerings up to a total dollar amount of initial aggregate offering price of \$100,000,000. This prospectus provides you with a general description of the securities that we may offer. Each time we sell securities under this process, we will provide a prospectus supplement that will contain specific information about the terms of that offering, including a description of any risks relating to the offering if those terms and risks are not described in this prospectus. A prospectus supplement may also add, update, or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement, you should rely on the information in the prospectus supplement.

Before investing in our securities, please carefully read both this prospectus and any prospectus supplement together with the documents incorporated by reference into this prospectus, as listed under “Documents Incorporated by Reference,” and the additional information described below under “Where You Can Find More Information.”

We may sell securities to or through underwriters or dealers, and we may also sell securities directly to other purchasers or through agents. To the extent not described in this prospectus, the names of any underwriters, dealers, or agents employed by us in the sale of the securities covered by this prospectus, the principal amounts or number of shares or other securities, if any, to be purchased by such underwriters or dealers, and the compensation, if any, of such underwriters, dealers, or agents will be described in a prospectus supplement.

Owning securities may subject you to tax consequences in the United States. This prospectus or any applicable prospectus supplement may not describe these tax consequences fully. You should read the tax discussion in any prospectus supplement with respect to a particular offering and consult your own tax advisor with respect to your own particular circumstances.

You should rely only on the information contained in or incorporated by reference into this prospectus or a prospectus supplement. We have not authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. 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 the securities and is not soliciting an offer to buy the 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. You should assume that the information contained in this prospectus and in any applicable prospectus supplement is accurate only as of the date on the front cover of this prospectus or prospectus supplement, as applicable, and the information incorporated by reference into this prospectus or any prospectus supplement is accurate only as of the date of the document incorporated by reference. Our business, financial condition, results of operations and prospects may have changed since that date.

In this prospectus, unless the context otherwise requires, references to “Aptose,” the “Company,” “we,” “us,” or “our” refer to Aptose Biosciences Inc. and its wholly owned subsidiaries through which it conducts its business.

Financial Statements and Exchange Rate Information

The consolidated financial statements incorporated by reference into this prospectus and the documents incorporated by reference into this prospectus, and the financial data derived from those consolidated financial statements included in this prospectus, are presented in Canadian dollars, unless otherwise specified, and have been prepared in accordance with International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board. References in this prospectus to “dollars”, “US\$” or “\$” are to United States dollars. Canadian dollars are indicated by the symbol “Cdn\$”.

The following table lists, for each period presented, the high and low exchange rates, the average of the exchange rates during the period indicated, and the exchange rates at the end of the period indicated, for one Canadian dollar, expressed in United States dollars, based on the noon exchange rate published by the Bank of Canada.

	Four Months ended September 30,		Year ended May 31,			
	2014		2014	2013		2012
High for the period	\$	0.9404	\$	0.9833	\$	1.0583
Low for the period	\$	0.8922	\$	0.8888	\$	0.9430
End of period	\$	0.8922	\$	0.9202	\$	0.9663
Average for the period	\$	0.9195	\$	0.9379	\$	1.0007

On December 1, 2014, the Bank of Canada's noon exchange rate was Cdn\$1.00 = \$0.8815.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form F-3, of which this prospectus forms a part. This prospectus does not contain all the information set out in the registration statement. For further information about us and the securities, please refer to the registration statement, including the exhibits to the registration statement. The exhibits to the registration statement provide more details of the matters discussed in this prospectus.

We are subject to the information requirements of the United States Securities Exchange Act of 1934, and we therefore file reports and other information with the SEC. The reports and other information filed by us with the SEC may be read and copied at the SEC's public reference room at 100 F Street, N.E., Washington, D.C. 20549. Copies of the same documents can also be obtained from the public reference room of the SEC in Washington by paying a fee. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room. The SEC also maintains a website (www.sec.gov) that makes available reports and other information that we file electronically with it, including the registration statement that we have filed with respect to the offering of these securities. We are also subject to filing requirements prescribed by the securities legislation of all Canadian provinces. These filings are electronically available from SEDAR at www.sedar.com.

As a "foreign private issuer" under the Exchange Act, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of proxy statements, and our officers, directors and principal shareholders are exempt from the reporting and "short-swing profit" recovery provisions contained in Section 16 of the Exchange Act. In addition, we are not required to publish financial statements as promptly as United States companies.

ENFORCEMENT OF CIVIL LIABILITIES

The enforcement by investors of civil liabilities under U.S. federal securities laws may be affected adversely by the fact that we are incorporated under the laws of Canada, that many of our directors are residents of countries other than the United States, that some of the experts named in this prospectus are residents of countries other than the United States, and that some of our assets and the assets of said persons are located outside the United States.

In particular, it may be difficult to bring and enforce suits against us or said persons under U.S. federal securities laws. It may be difficult for U.S. holders of our common shares to effect service of process on us or said persons within the United States or to enforce judgments obtained in the United States based on the civil liability provisions of the U.S. federal securities laws against us or said persons. In addition, a shareholder should not assume that the courts of Canada (i) would enforce judgments of U.S. courts obtained in actions against us, our officers or directors, or other said persons, predicated upon the civil liability provisions of the U.S. federal securities laws or other laws of the United States, or (ii) would enforce, in original actions, liabilities against us, our officers or directors or other said persons predicated upon the U.S. federal securities laws or other laws of the United States.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents filed with or furnished to the SEC are specifically incorporated by reference into, and form a part of, this prospectus:

- our Annual Report on Form 20-F for the fiscal year ended May 31, 2014, filed on July 30, 2014;

- the description of our common shares set forth in our registration statement on Form 8-A, filed on October 21, 2014 (which incorporates by references the description of our common shares included in our Annual Report on Form 20-F for the fiscal year ended May 31, 2014, filed on July 30, 2014);
- our Report of Foreign Issuer on Form 6-K containing interim financial statements and interim Management's Discussion and Analysis for the four months ended September 30, 2014, furnished to the SEC on November 5, 2014;
- our Report of Foreign Issuer on Form 6-K furnished to the SEC on October 22, 2014;
- our Report of Foreign Issuer on Form 6-K furnished to the SEC on October 9, 2014;
- Exhibit 99.1 to our Report of Foreign Issuer on Form 6-K furnished to the SEC on October 7, 2014;
- our Report of Foreign Issuer on Form 6-K furnished to the SEC on September 2, 2014;
- our Report of Foreign Issuer on Form 6-K furnished to the SEC on August 19, 2014;
- all other documents filed by us under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, after the date of this prospectus but before the end of the offering of the securities pursuant to this prospectus.

In addition, all subsequent Annual Reports on Form 20-F, Form 40-F or Form 10-K, and all subsequent filings on Form 10-Q or Form 8-K, that we file pursuant to the Exchange Act prior to the termination of this offering, are hereby incorporated by reference into this prospectus. Also, we may incorporate by reference future reports on Form 6-K that we furnish subsequent to the date of this prospectus by stating in those Form 6-Ks that they are being incorporated by reference into this prospectus.

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

Any person receiving a copy of this prospectus, including any beneficial owner, may obtain without charge, upon written or oral request, a copy of any of the documents incorporated by reference into this prospectus, except for the exhibits to those documents unless the exhibits are specifically incorporated by reference into those documents. Requests should be directed to our principal executive offices, 2 Meridian Road, Toronto, Ontario, Canada M9W 4Z7, Attention: Chief Financial Officer (telephone: (416) 798-1200).

RISK FACTORS

An investment in our securities is highly speculative and subject to a number of known and unknown risks. Only those persons who can bear the risk of the entire loss of their investment should purchase our securities. You should carefully consider the risk factors in our Annual Report on Form 20-F for the fiscal year ended May 31, 2014 incorporated by reference herein and the other information contained in this prospectus, as updated by our subsequent filings under the Exchange Act and the risk factors and other information contained in any applicable prospectus supplement, before purchasing any of our securities. Any of the matters highlighted in these risk factors could have a material adverse effect on our business, results of operations and financial condition, causing an investor to lose all, or part of, its, his or her investment.

The risks and uncertainties described in this prospectus and the documents incorporated by reference herein are not the only ones we face. Additional risks and uncertainties that we are not aware of or focused on, or that we currently deem to be immaterial, may also impair our business operations and cause the trading price of our securities to decline.

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 provincial securities law. 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:

- our ability to obtain the substantial capital we require to fund research and operations;
- our lack of product revenues and 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 drug candidates require time-consuming and costly preclinical and clinical testing and regulatory approvals before commercialization;
- 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 delay our ability to generate revenue;
- the regulatory approval process;
- our ability to recruit patients for clinical trials;
- the progress of our clinical trials;
- our liability associated with the indemnification of our predecessor and its directors, officers and employees in respect of an arrangement completed in 2007;
- our ability to find and enter into agreements with potential partners;
- our ability to attract and retain key personnel;
- our ability to obtain patent protection;
- our ability to protect our intellectual property rights and not infringe on the intellectual property rights of others;
- our ability to comply with applicable governmental regulations and standards;
- development or commercialization of similar products by our competitors, many of which are more established and have or have access to greater financial resources than us;
- commercialization limitations imposed by intellectual property rights owned or controlled by third parties;
- potential product liability and other claims;
- our ability to maintain adequate insurance at acceptable costs;
- further equity financing, which may substantially dilute the interests of our shareholders; and
- changing market conditions.

Although the forward-looking statements contained in this prospectus and in the documents incorporated by reference are based on what we consider to be reasonable assumptions based on information currently available to us, there can be no assurance that actual events, performance or results will be consistent with these forward-looking statements, and our assumptions may prove to be incorrect. 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.**

THE COMPANY

This summary does not contain all of the information about our company that may be important to you and your investment decision. You should carefully read the entire prospectus and the applicable prospectus supplement, including the section entitled “Risk Factors” as well as the risk factors described in the documents incorporated by reference into this prospectus and the applicable prospectus supplement, before making an investment decision.

We are a clinical-stage biotechnology company committed to discovering and developing personalized therapies addressing unmet medical needs in oncology. We are advancing new therapeutics focused on novel cellular targets on the leading edge of cancer research coupled with companion diagnostics to identify the optimal patient population for our products. Our small molecule cancer therapeutics pipeline includes products designed to provide additive or synergistic efficacy with existing anti-cancer therapies and regimens without overlapping toxicities.

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: NuChem Pharmaceuticals Inc. (“NuChem”), a company incorporated under the laws of Ontario, Canada, and Aptose Biosciences U.S. Inc. (“Aptose USA”), a company incorporated under the laws of Delaware, USA. The Company owns 80% of the issued and outstanding voting share capital of NuChem and 100% of the issued and outstanding voting share capital of Aptose USA.

CAPITALIZATION AND INDEBTEDNESS

Our capitalization will be set forth in a prospectus supplement to this prospectus or in a report on Form 6-K subsequently furnished to the SEC and specifically incorporated herein by reference.

OFFER AND LISTING

Our common shares are currently listed on the TSX under the symbol “APS”. The following table sets out the price ranges of our common shares on the TSX for the periods indicated below.

	TSX (CDN\$)	
	High	Low
Five most recent full fiscal years:		
Year ended May 31, 2014	12.48	2.04
Year ended May 31, 2013	7.68	2.28
Year ended May 31, 2012	8.64	1.92
Year ended May 31, 2011	30.60	8.16
Year ended May 31, 2010	46.80	21.60
Year ended May 31, 2014	12.48	2.04
Quarter ended May 31, 2014	9.24	5.16
Quarter ended February 28, 2014	10.56	5.88
Quarter ended November 30, 2013	12.48	2.16
Quarter ended August 31, 2013	2.88	2.04
Year ended May 31, 2013	7.68	2.28
Quarter ended May 31, 2013	3.60	2.28
Quarter ended February 29, 2013	5.40	2.64
Quarter ended November 30, 2012	5.76	2.40
Quarter ended August 31, 2012	7.68	3.84
Most recent six months:		
November 2014	8.50	6.81
October 2014	9.14	5.20
September 2014	6.84	5.28
August 2014	6.36	4.80
July 2014	6.36	5.04
June 2014	6.36	5.16
May 2014	6.84	5.16

On October 1, 2014 the Company announced that it had filed articles of amendment to give effect to a reverse stock split (consolidation) of its common shares on the basis of one post-consolidation common share for each twelve pre-consolidation common shares. The post-consolidation shares began trading on the Toronto Stock Exchange on October 6, 2014. Historical trading prices have been amended to reflect the 1 for 12 consolidation.

Our common shares began trading on NASDAQ on October 23, 2014 under the symbol "APTO". The following table sets out the price ranges of our common shares on NASDAQ for the periods indicated below.

	NASDAQ (\$)	
	High	Low
Most recent two months:		
October 23, 2014 through October 31, 2014	8.80	5.52
November 2014	7.58	5.87

On December 1, 2014, the last reported sale price of our common shares on the TSX was Cdn\$8.09 per common share and on NASDAQ was \$7.20 per common share.

USE OF PROCEEDS

Unless otherwise indicated in a prospectus supplement, the net proceeds that we receive from the sale of the securities offered by this prospectus will be used by us for working capital and general corporate purposes. We have not allocated any portion of the net proceeds for any particular use as of the date of this prospectus. The net proceeds may be invested temporarily until they are used for their stated purpose. Specific information concerning the use of proceeds from the sale of any securities will be included in the prospectus supplement relating to such securities.

DESCRIPTION OF SHARE CAPITAL

Authorized Capital

On October 1, 2014 the Company announced that it had filed articles of amendment to give effect to a reverse stock split (consolidation) of its common shares on the basis of one post-consolidation common share for each twelve pre-consolidation common shares.

Our authorized share capital consists of an unlimited number of common shares, without par value. As of December 1, 2014, there were 11,659,707 common shares issued and outstanding on a post-consolidated basis.

As of December 1, 2014, our current and former directors, executive officers, employees and certain consultants held options to acquire an aggregate of 1,409,588 common shares under the terms of our employee stock option plan on a post-consolidated basis.

As of December 1, 2014, an aggregate of 213,552 common shares were issuable upon the exercise of outstanding common share purchase warrants with exercise prices between \$3.00 and \$6.60 per common share on a post-consolidated basis.

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 profits or surplus of the Company 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 ratably in any distribution of the remaining property of the Company 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.

Prior Sales

During the 36-month period prior the date of this prospectus, we issued 10,352,614 common shares (124,231,372 pre-consolidation). An aggregate of 5,625 common shares (67,500 pre-consolidation) were issued upon the exercise of outstanding stock options for prices ranging from \$2.16 to \$5.70 (\$0.18 to \$0.475 pre-consolidation) and 65,000 common shares (780,000 pre-consolidation) were issued upon settlement of an outstanding deferred share unit liability.

In April 2014, we completed a public offering in Canada and a simultaneous private placement in the United States of common shares. We issued 4,708,333 common shares (67,500 pre-consolidation) at a purchase price of Cdn\$6.00 per common share (Cdn\$0.50 pre-consolidation) including 541,667 common shares (6,500,000 pre-consolidation) pursuant to the partial exercise of an over-allotment option, for aggregate gross proceeds of approximately Cdn\$28,250,000.

On December 10, 2013, we completed a public offering in Canada of common shares. We issued a total of 1,060,833 common shares (12,730,000 pre-consolidation) at a price of Cdn\$6.60 per common share (Cdn\$0.55 pre-consolidation), for aggregate gross proceeds of approximately \$7,001,500 from this offering. On January 8, 2014, the underwriters conducting the offering exercised in full their over-allotment option to purchase an additional 159,125 common shares (1,909,500 pre-consolidation) of the Company at a price of Cdn\$6.60 per common share (Cdn\$0.55 pre-consolidation) for additional gross proceeds of approximately Cdn\$1,050,225. The Company also issued 73,198 broker warrants (878,370 pre-consolidation) with an estimated fair value of Cdn\$349,592 using the Black Scholes model. Each broker warrant is exercisable into one common share of the Company at a price of Cdn\$6.60 (Cdn\$0.55 pre-consolidation) until December 10, 2015.

In September 2013, we completed a private placement of convertible promissory notes for aggregate gross proceeds of Cdn\$600,000. Each convertible promissory note consists of a Cdn\$1,000 principal amount of unsecured promissory note convertible into common shares of the Company at a price per share of Cdn\$3.60 (Cdn\$0.30 pre-consolidation). The promissory notes bear interest at a rate of 10% per annum, payable quarterly and are due September 26, 2015. In October 2014 \$162,500 of these promissory notes were converted into 45,139 common shares of the Company.

In June 2013, we completed a private placement of units at a price of Cdn\$1,000 per unit, for aggregate gross proceeds of Cdn\$918,000. Each unit consisted of (i) a Cdn\$1,000 principal amount of unsecured promissory note and (ii) 1,000 common share purchase warrants. The promissory notes bore interest at a rate of 10% per annum, payable monthly and were due June 19, 2014. Each warrant entitled the holder to purchase one common share of the Company at a price per common share equal to Cdn\$3.00 (Cdn\$0.25 pre-consolidation) at any time until June 19, 2015. The notes and any interest accrued thereon were repaid in full in April 2014. Of the 76,500 common share purchase warrants (918,000 pre-consolidation) issued as part of the transaction 29,167 (350,000 pre-consolidation) have been exercised up to September 30, 2014, leaving 47,333 (568,000 pre-consolidation) outstanding.

In June 2012, we completed a private placement of 1,718,750 units (20,625,000 pre-consolidation) at a subscription price of Cdn\$3.84 (Cdn\$0.32 pre-consolidation) per unit and each unit consisted of one common share and one common share purchase warrant for gross proceeds to the Company of approximately Cdn\$6,600,000. Each warrant was exercisable for a period of 24 months from the date of issuance at an exercise price of Cdn\$5.40 (Cdn\$0.45 pre-consolidation). The Company also issued 103,125 finder's warrants (1,237,500 pre-consolidation) at an exercise price of Cdn\$3.84 (Cdn\$0.32 pre-consolidation) each. Each finder's warrant was exercisable into units consisting of 103,125 common shares (1,237,500 pre-consolidation) and 103,125 warrants (1,237,500 pre-consolidation). All of the common share purchase warrants issued in the transaction had an expiry date of June 8, 2014. The 103,125 finders warrants (1,237,500 pre-consolidation) were exercised including the underlying common share purchase warrants and 1,528,468 of the common share purchase warrants (18,341,620 pre-consolidation) were exercised at a price of Cdn\$5.40 per common share (Cdn\$0.45 pre-consolidation). The remaining 190,282 common share purchase warrants (2,283,380 pre-consolidation) expired unexercised.

In May 2012, 4,949 warrants (59,384 pre-consolidation) were exercised for cash proceeds of Cdn\$16,628.

In August 2011, we closed a Canadian public offering for gross proceeds of Cdn\$2,193,600 whereby we issued 457,000 common shares (5,484,000 pre-consolidation) and 473,126 warrants (5,677,515 pre-consolidation) including broker warrants. Each warrant entitles the holder to purchase one common share for five years after the closing of the offering at an exercise price of Cdn\$5.40 (Cdn\$0.45 pre-consolidation). If on any date the 10-day volume weighted average trading price of the common shares on the TSX equals or exceeds 200% of the Cdn\$5.40 (Cdn\$0.45 pre-consolidation) exercise price, then upon sending the holders of warrants written notice of and issuing a news release announcing such accelerated exercise date, the warrants shall only be exercisable for a period of 30 days following the date of notice. To date 363,979 of the common share purchase warrants (4,367,750 pre-consolidation) have been exercised and the 16,126 broker warrants (193,515 pre-consolidation) expired unexercised.

Dividend Policy

We have not paid any dividends since our incorporation. We will consider paying dividends in 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 the board of directors to retain all earnings to finance our business plan.

Transfer Agent and Registrar

The transfer agent and registrar for our common shares is Computershare Investor Services Inc. at its principal offices in Toronto, Ontario, Canada.

Our common shares are listed on the TSX under the symbol "APS" and on NASDAQ under the symbol "APTO".

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of common shares. Warrants may be offered separately or together with other securities offered by this prospectus, as the case may be. Unless the applicable prospectus supplement otherwise indicates, each series of warrants will be issued under a separate warrant indenture to be entered into between us and one or more banks or trust companies acting as warrant agent. The applicable prospectus supplement will include details of the warrant agreements covering the warrants being offered. The warrant agent will act solely as our agent and will not assume a relationship of agency with any holders of warrant certificates or beneficial owners of warrants.

The following sets forth certain general terms and provisions of the warrants offered under this prospectus. The specific terms of the warrants, and the extent to which the general terms described in this section apply to those warrants, will be set forth in the applicable prospectus supplement. The terms of any warrants offered under a prospectus supplement may differ from the terms described below.

The particular terms of each issue of warrants will be described in the related prospectus supplement. This description will include some or all of the following:

- the designation and aggregate number of warrants;
- the price at which the warrants will be offered;
- the currency or currencies in which the warrants will be offered;
- the designation and terms of our common shares purchasable upon exercise of the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;

- the number of common shares that may be purchased upon exercise of each warrant and the price at which and currency or currencies in which our common shares may be purchased upon exercise of each warrant;
- the designation and terms of any securities with which the warrants will be offered, if any, and the number of the warrants that will be offered with each security;
- the date or dates, if any, on or after which the warrants and the related securities will be transferable separately;
- if applicable, whether the warrants will be subject to redemption or call and, if so, the terms of such redemption or call provisions;
- material United States and Canadian tax consequences of owning the warrants; and
- any other material terms or conditions of the warrants.

Each warrant will entitle the holder to purchase common shares, as specified in the applicable prospectus supplement at the exercise price that we describe therein. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

The warrant indenture, if any, and the warrant certificate will specify that upon the subdivision, consolidation, reclassification or other material change of our common shares or any other reorganization, amalgamation, merger or sale of all or substantially all of our assets, the warrants will thereafter evidence the right of the holder to receive the securities, property or cash deliverable in exchange for or on the conversion of or in respect of our common shares to which the holder of a common share would have been entitled immediately after such event. Similarly, any distribution to all or substantially all of the holders of common shares of rights, options, warrants, evidences of indebtedness or assets will result in an adjustment in the number of common shares to be issued to holders of warrants.

Prior to the exercise of any warrants to purchase common shares, holders of the warrants will not have any of the rights of holders of the underlying common shares, including the right to receive payments of dividends, if any, on the underlying common shares, or to exercise any applicable right to vote.

DESCRIPTION OF UNITS

We may issue units comprised of one or more of the other securities that may be offered under this prospectus, in any combination. The following information, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of any such the units that we may offer under this prospectus. While the information below will apply generally to any units that we may offer under this prospectus, we will describe the particular terms of any series of units in detail in the applicable prospectus supplement. The terms of any units offered under a prospectus supplement may differ from the general terms described below.

We will file the form of unit agreement, if any, between us and a unit agent that describes the terms and conditions of the series of units we are offering, and any supplemental agreements, concurrently with the filing of the applicable prospectus supplement under which such series of units are offered. This summary is subject to, and qualified in their entirety by reference to, all the provisions of the unit agreement, if any, and any supplemental agreements applicable to a particular series of units. We urge you to read the applicable prospectus supplements related to the particular series of units that we sell under this prospectus, as well as the complete unit agreement, if any, and any supplemental agreements that contain the terms of the units.

We may issue units comprising one or more of common shares and warrants 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, under which a unit may be issued, if any, may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date. We will describe in the applicable prospectus supplement the terms of the series of units.

The provisions described in this section, as well as those described under “Description of Share Capital” and “Description of Warrants” will apply to each unit and to any common share or warrant included in each unit, respectively.

We may issue units in such amounts and in numerous distinct series as we determine.

PLAN OF DISTRIBUTION

We may sell the securities offered by this prospectus to or through underwriters or dealers, and also may sell those 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, or if indicated in a prospectus supplement, pursuant to delayed delivery contracts, by remarketing firms or by other means. Underwriters may sell securities to or through dealers. Each prospectus supplement will set forth the terms of the offering, including the name or names of any underwriters, dealers or agents and any fees or compensation payable to them in connection with the offering and sale of a particular series or issue of securities, the public offering price or prices of the securities and the proceeds from the sale of the securities.

The securities may be sold, from time to time in one or more transactions at a fixed price or prices which may be changed or at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices, including sales in transactions that are deemed to be “at-the-market distributions” as defined in National Instrument 44-102 Shelf Distributions, including sales made directly on the TSX, NASDAQ or other existing trading markets for the 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 United States Securities Act of 1933 and Canadian securities legislation, or to contribution with respect to payments which 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, the underwriters may over-allot or effect transactions which 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. Any underwriters, dealers or agents to or through which securities other than our common shares are sold by us for public offering and sale may make a market in such securities, but such underwriters, dealers or agents will not be obligated to do so and may discontinue any such market making at any time and without notice. No assurance can be given that a market for trading in securities of any series or issue will develop or as to the liquidity of any such market, whether or not such securities are listed on a securities exchange.

The place, time of delivery, and other terms of the offered securities will be described in the applicable prospectus supplement.

CERTAIN INCOME TAX CONSIDERATIONS

The applicable prospectus supplement may describe certain Canadian federal income tax consequences to investors described therein of acquiring securities offered by the prospectus, including, in the case of an investor who is not a resident of Canada (for purposes of the *Income Tax Act* (Canada)), if applicable, whether payment of principal, premium, if any, and interest will be subject to Canadian non-resident withholding tax.

The applicable prospectus supplement may also describe certain United States federal income tax consequences of the acquisition, ownership and disposition of securities offered by this prospectus by an initial investor who is subject to United States federal income taxation.

INTERESTS OF NAMED EXPERTS AND COUNSEL

None.

LEGAL MATTERS

Unless otherwise specified in the prospectus supplement relating to any offering of securities under this prospectus, certain matters under Canadian law relating to the offering of the securities under this prospectus will be passed upon for us by McCarthy Tétrault LLP and certain legal matters under United States law will be passed upon for us by Dorsey & Whitney LLP, Vancouver, British Columbia. In addition, certain legal matters in connection with any offering of securities under this prospectus will be passed upon for any underwriters, dealers or agents by counsel to be designated at the time of the offering by such underwriters, dealers or agents with respect to matters of Canadian and United States law.

EXPERTS

The consolidated financial statements of Aptose Biosciences Inc. as of May 31, 2014 and 2013, and for each of the years in the three-year period ended May 31, 2014, 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.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 8. Indemnification of Directors and Officers

Under the Canada Business Corporations Act (the "CBCA"), the registrant may indemnify its current or former directors or officers or another individual who acts or acted at the registrant's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of his or her association with the registrant or another entity, and the individual seeking indemnity shall have a right to such indemnity if such individual was not judged by the court or other competent authority to have committed any fault or omitted to do anything that such individual ought to have done. The CBCA also provides that the registrant may advance moneys to such an individual for the costs, charges and expenses of such a proceeding.

The CBCA also provides that the registrant may with the approval of a court, indemnify such an individual or advance moneys against all costs, charges and expenses reasonably incurred by the individual in connection with an action by or on behalf of the registrant or other entity to procure a judgment in its favour, to which the individual is made a party because of the individual's association with the registrant or other entity at the registrant's request.

However, indemnification under any of the foregoing circumstances is prohibited under the CBCA unless the individual:

- acted honestly and in good faith with a view to the registrant's best interests, or the best interests of the other entity for which the individual acted as director or officer or in a similar capacity at the registrant's request; and
- in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that his or her conduct was lawful.

The registrant's by-law No. 2 provides that the registrant will indemnify its directors or officers, former directors or officers or other individuals who act or have acted at the registrant's request as a director or officer, or in a similar capacity, of another entity, and his or her heirs and legal representatives to the extent permitted by the CBCA.

The registrant's by-law No. 2 further provides that, except as otherwise required by the CBCA, the registrant may from time to time indemnify and save harmless any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the registrant) by reason of the fact that he or she is or was an employee or agent of the registrant, or is or was serving at the request of the registrant as an employee, agent of or participant in another entity against expenses (including legal fees), judgments, fines and any amount actually and reasonably incurred by him or her in connection with such action, suit or proceeding if he or she acted honestly and in good faith with a view to the best interests of the registrant or, as the case may be, to the best interests of the other entity for which he or she served at the registrant's request and, with respect to any criminal or administrative action or proceeding that is enforced by a monetary penalty, had reasonable grounds for believing that his or her conduct was lawful. The termination of any action, suit or proceeding by judgment, order, settlement or conviction will not, of itself, create a presumption that the person did not act honestly and in good faith with a view to the best interests of the registrant or other entity and, with respect to any criminal or administrative action or proceeding that is enforced by a monetary penalty, had no reasonable grounds for believing that his or her conduct was lawful.

The registrant has entered into indemnity agreements with its directors and certain officers pursuant to which it has agreed to indemnify its officers and directors for:

- (a) all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by them in respect of any civil, criminal or administrative action or proceeding to which they are made a party by reason of being or having been a director and/or officer of the registrant, if (i) they acted honestly and in good faith with a view to the best interests of the registrant, and (ii) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, they had reasonable grounds for believing that their conduct was lawful.

- (b) all costs, charges and expenses reasonably incurred by them in connection with any action by or on behalf of the registrant to procure a judgment in the registrant's favour to which they are made a party by reason of being or having been a director and/or officer of the registrant.
- (c) all costs, charges and expenses reasonably incurred by them in connection with the defense of any civil, criminal or administrative proceeding to which they are made a party by reason of being or having been a director and/or officer of the registrant if they have been substantially successful on the merits in their defense of the action or proceeding and they fulfil the conditions set forth in the two foregoing clauses (a)(i) and (a)(ii) above.

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

Item 9. Exhibits.

Exhibit	Description
1.1*	Form of Underwriting Agreement
4.1*	Form of Warrant
4.2*	Form of Warrant Indenture
4.3*	Form of Unit Agreement
5.1	Opinion of McCarthy Tétrault LLP
23.1	Consent of KPMG LLP
23.4	Consent of McCarthy Tétrault LLP (included in Exhibit 5.1)
24.1	Powers of Attorney (included on the signature pages to this registration statement)

*To be filed as an exhibit to a post-effective amendment to this registration statement or as an exhibit to a report filed on Form 6-K under the Exchange Act and incorporated herein by reference.

Item 10. Undertakings.

The undersigned registrant hereby undertakes:

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

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

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

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

provided, however, that the undertakings set forth in paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) above do not apply if the registration statement is on Form S-3 or Form F-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

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

(4) To file a post-effective amendment to the registration statement to include any financial statements required by Item 8.A of Form 20-F at the start of any delayed offering or throughout a continuous offering. Financial statements and information otherwise required by Section 10(a)(3) of the Securities Act of 1933 need not be furnished, *provided* that the registrant includes in the prospectus, by means of post-effective amendment, financial statements required pursuant to this paragraph (4) and other information necessary to ensure that all other information in the prospectus is at least as current as the date of those financial statements. Notwithstanding the foregoing, with respect to registration statements on Form F-3, a post-effective amendment need not be filed to include financial statements and information required by Section 10(a)(3) of the Securities Act or Rule 3-19 of Regulation S-K if such financial statements and information are contained in periodic reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference into the registration statement.

(5) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) If the registrant is relying on Rule 430B:

(A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(6) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

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

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

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

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

(b) For purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(c) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form F-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Toronto, Ontario on this 1st day of December, 2014.

APTOSE BIOSCIENCES INC.

By: /s/ William G. Rice
Name: William G. Rice
Title: Chairman, President and CEO

POWERS OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints William G. Rice and Gregory K. Chow, and each of them, his true and lawful attorneys-in-fact and agents, each acting alone, with the powers of substitution and revocation, for him and in his name, place and stead, in any and all capacities, to sign this Registration Statement on Form F-3, and any and all amendments (including post-effective amendments) thereto, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto such attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming that all such attorneys-in-fact and agents or any of them, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities indicated below on December 1, 2014.

<u>/s/ Dr. William G. Rice</u> Dr. William G. Rice	President, Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)
<u>/s/ Gregory K. Chow</u> Gregory K. Chow	Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)
<u>/s/ Avanish Vellanki</u> Avanish Vellanki	Senior Vice President and Chief Business Officer
<u>/s/ Dr. Denis Burger</u> Dr. Denis Burger	Director
<u>/s/ Dr. Brad Thompson</u> Dr. Brad Thompson	Director
<u>/s/ Dr. Brian Underdown</u> Dr. Brian Underdown	Director
<u>/s/ Dr. Mark Vincent</u> Dr. Mark Vincent	Director
<u>/s/ Warren Whitehead</u> Warren Whitehead	Director

AUTHORIZED REPRESENTATIVE

Pursuant to the requirements of Section 6(a) of the Securities Act of 1933, the undersigned has signed this registration statement, in the capacity of the duly authorized representative of Aptose Biosciences Inc. in the United States, in the City of San Diego, in the State of California, on December 1, 2014.

APTOSE BIOSCIENCES U.S. INC.

By: /s/ William G. Rice

Name: William G. Rice

Title: Chief Executive Officer

EXHIBIT INDEX

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*To be filed as an exhibit to a post-effective amendment to this registration statement or as an exhibit to a report filed on Form 6-K under the Exchange Act and incorporated herein by reference.

McCarthy Tétrault LLP
Box 48, Suite 5300
Toronto Dominion Bank Tower
Toronto ON M5K 1E6
Canada
Tel: 416-362-1812
Fax: 416-868-0673



December 1, 2014

Aptose Biosciences Inc.
2 Meridian Road
Toronto, Ontario M9W 4Z7

Dear Sirs:

**Re: Aptose Biosciences Inc.
Registration Statement on Form F-3**

We have acted as Canadian counsel to Aptose Biosciences Inc. (the “**Company**”) in connection with the preparation and filing with the United States Securities and Exchange Commission (the “**Commission**”) under the United States Securities Act of 1933, as amended (the “**Securities Act**”), of the Company’s Registration Statement on Form F-3 to be filed on the date hereof (the “**Registration Statement**”), relating to offers and sales from time to time of up to US\$100,000,000 of the Company’s common shares (the “**Common Shares**”), warrants to purchase Common Shares (the “**Warrants**”) and units that may be comprised of a combination of Common Shares and Warrants (the “**Units**”) and, collectively with the Common Shares and Warrants, the “**Offered Securities**”).

The Registration Statement includes a prospectus (the “**Prospectus**”), which provides that it will be supplemented in the future by one or more prospectus supplements (each a “**Prospectus Supplement**”). The Warrants may be issued under a separate warrant indenture (a “**Warrant Indenture**”) to be entered into between the Company and one or more banks or trust companies acting as warrant agent and the Warrants will be represented by certificates (each a “**Warrant Certificate**”) and together with the Warrant Indenture, the “**Governing Warrant Documents**”).

In connection with this opinion, we have examined and relied upon originals or copies, certified or otherwise identified to our satisfaction, of:

- (a) the Registration Statement;
- (b) the Company’s articles (the “**Articles**”), as in effect on the date hereof;
- (c) the Company’s bylaws (together with the Articles, the “**Constating Documents**”), as in effect on the date hereof; and
- (d) a copy of the resolutions of the Company’s Board of Directors relating to the Registration Statement and other matters.

We have also examined originals or copies, certified or otherwise identified to our satisfaction, of such records of the Company and such agreements, certificates of public officials, certificates of officers, or other representatives of the Company, and such other documents as we have deemed necessary or appropriate as a basis for the opinion set forth herein.

In our examination, we have assumed the legal capacity of all natural persons, the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, conformed, photostatic, electronic, or facsimile copies and the authenticity of the originals of such documents. In making our examination of executed documents or documents which may be executed, we have assumed that the parties thereto, other than the Company, had or will have the power, corporate or other, to enter into and perform all obligations thereunder and have also assumed the due authorization by all requisite action, corporate or other, and execution and delivery by such parties, of such documents and that (except to the extent we have opined on such matters below) such documents constitute or will constitute valid and binding obligations of the parties thereto.

As to any facts material to the opinion expressed herein which we have not independently established or verified, we have relied upon statements and representations of officers and other representatives of the Company and others. We have also assumed that, at the time of issuance of any Offered Securities:

- (a) the Constatng Documents, and the Applicable Law (defined below) shall not have been amended so as to affect the validity of such issuance,
- (b) the Registration Statement, as finally amended (including all necessary post-effective amendments), has become and remains effective under the Securities Act,
- (c) an appropriate amended Prospectus or Prospectus Supplement with respect to the applicable Offered Securities has been prepared, delivered, and filed in compliance with the Securities Act and the applicable rules and regulations thereunder;
- (d) all Offered Securities will be offered, issued and sold in compliance with applicable United States federal and state securities laws and in the manner stated in the Registration Statement, the Prospectus and the appropriate Prospectus Supplement;
- (e) the Offered Securities are issued in accordance with the terms of their governing instruments;
- (f) any applicable Governing Warrant Document or Unit Agreement (as defined below) will have been duly authorized, executed and delivered by the Company and the other parties thereto, as applicable, and constitutes legally valid and binding obligations of the parties thereto, enforceable against each of them in accordance with its terms;
- (g) any Governing Warrant Document or any Unit Agreement is governed by Ontario law; and
- (h) if the Offered Securities are to be sold pursuant to a brokered offering, the underwriting, purchase or agency agreement with respect to the applicable Offered Securities will have been duly authorized, executed and delivered by the Company and the other parties thereto, and is a legally valid and binding obligation of the parties thereto.

The opinions expressed herein are limited to the laws of the Province of Ontario and the federal laws of Canada applicable therein (the "Applicable Law").

Based and relying upon and subject to the foregoing, we are of the opinion that:

1. With respect to any Common Shares which may be offered pursuant to the Registration Statement (the **“Offered Common Shares”**), when
 - (a) the issuance and sale of the Offered Common Shares have been duly authorized by all necessary corporate action in conformity with the Constatting Documents (as then in effect), and the *Canada Business Corporations Act* (the **“CBCA”**) (as then in effect), and do not violate any Applicable Law or result in a default under or breach of any agreement or instrument binding upon the Company or any of its subsidiaries and comply with any requirement or restriction imposed by any court or governmental body of Canada or Ontario having jurisdiction over the Company or any of its subsidiaries;
 - (b) the full consideration, determined to be adequate by the Company’s Board of Directors (or a duly authorized committee thereto), which is at least equal to the issue price of the Offered Common Shares, has been received by the Company; and
 - (c) if certificated, the certificates representing the Offered Common Shares have been duly executed and delivered by the proper officers of the Company to the purchasers thereof against payment of the agreed-upon consideration therefor in the manner contemplated in the Registration Statement or any Prospectus Supplement relating thereto,the Offered Common Shares will be validly issued, fully paid, and non-assessable.
 2. With respect to any Warrants which may be offered pursuant to the Registration Statement (the **“Offered Warrants”**), when
 - (a) the terms, issuance, and sale of the Offered Warrants and the performance under the Governing Warrant Documents, the issuance of the Common Shares upon the exercise of the Offered Warrants, and the Governing Warrant Documents have been duly authorized by all necessary corporate action, including the authorization of the issuance and reservation (if appropriate) of the Common Shares to be issued pursuant to the Offered Warrants, in conformity with the Constatting Documents (as then in effect), and the CBCA (as then in effect), and provided the issuance and sale does not violate any Applicable Law or result in a default under or breach of any agreement or instrument binding upon the Corporation or any of its subsidiaries and comply with any requirement or restriction imposed by any court or governmental body of Canada or Ontario having jurisdiction over the Company or any of its subsidiaries;
 - (b) the full consideration, determined to be adequate by the Company’s Board of Directors (or a duly authorized committee thereto), for the Offered Warrants has been received by the Company;
 - (c) the Warrant Certificates representing the Offered Warrants have been duly executed, countersigned (if required), issued, and delivered in accordance with the terms of the Warrant Indenture, if any, to the purchasers thereof against payment of the agreed-upon consideration therefor in the manner contemplated in the Registration Statement or any Prospectus Supplement relating thereto; and
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- (d) the Warrant Indenture, if any, relating to the Offered Warrants and the underlying Common Shares has been duly authorized, executed, and delivered and the Warrant Indenture, if applicable, has been duly authorized by the Company's Board of Directors (or a duly authorized committee thereto),

the Offered Warrants will be validly issued, fully paid and non-assessable, and the Warrant Indenture, if any, and the Warrant Certificates will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

3. With respect to any Units which may be offered pursuant to the Registration Statement (the "**Offered Units**"), when

- (a) the terms, issuance and sale of the Offered Units, and performance under the agreement in connection with the offering of the Units (the "**Unit Agreement**") have been duly authorized by all necessary corporate action, including the authorization of the issuance and reservation (if appropriate) of the Common Shares or Warrants to be issued pursuant to the Offered Units, in conformity with the Constatng Documents (as then in effect), and the CBCA (as then in effect), and provided the issuance and sale does not violate any Applicable Law or result in a default under or breach of any agreement or instrument binding upon the Company or any of its subsidiaries and comply with any requirement or restriction imposed by any court or governmental body of Canada or Ontario having jurisdiction over the Company or any of its subsidiaries;
- (b) the Warrant Certificates representing the Warrants to be issued as part of the Offered Units and, if certificated, the certificates representing the Common Shares to be issued as part of the Offered Units, have been duly executed, countersigned (if required) and delivered in accordance with the terms of the Unit Agreement to the purchasers thereof against payment of the agreed-upon consideration therefor in the manner contemplated in the Registration Statement or any Prospectus Supplement relating thereto;
- (c) the full consideration, determined to be adequate by the Company's Board of Directors (or a duly authorized committee thereto), for the Offered Units has been received by the Company; and
- (d) the Unit Agreement relating to the Offered Units has been duly authorized, executed, and delivered and the Unit Agreement has been duly authorized by the Company's Board of Directors (or a duly authorized committee thereto),

the Offered Units will be validly issued fully paid and non-assessable and the Unit Agreement and Warrant Certificates will be valid and binding obligations of the Company; enforceable against the Company in accordance with their terms.

Insofar as our opinion in paragraphs 2 and 3 above relates to the legality, validity, binding nature or enforceability of the Warrant Certificate, Warrant Indenture, Offered Units and Unit Agreement, such opinion is subject to:

- (a) any applicable bankruptcy, insolvency, moratorium, arrangement, winding up laws or similar laws affecting the enforcement of creditors' rights generally including laws regarding limitations of action;
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- (b) general principles of equity, including the principle that the granting of equitable remedies such as specific performance and injunctive relief is within the discretion of a court of competent jurisdiction;
- (c) the powers of a court of competent jurisdiction to grant relief from forfeiture, to stay proceedings before it and to stay execution on judgments;
- (d) the qualification that the costs of and incidental to all proceedings authorized to be taken in court are in the discretion of the court and the court has full power to determine by whom and to what extent such costs shall be paid;
- (e) the qualification that rights to indemnity and contribution may be limited by applicable law;
- (f) the qualification that a court may require the discretionary powers expressed to be conferred on any party to such agreement or certificate to be exercised reasonably and in good faith notwithstanding any provisions to the contrary and may decline to accept as conclusive factual or legal determinations described as conclusive therein;
- (g) the qualification that any provision in such agreement or certificate which purports to sever from such agreement or certificate, as the case may be, any provision therein which is prohibited or unenforceable under applicable law without affecting the validity of the remainder of the agreement or certificate, as the case may be, would be enforced only to the extent that the court determined that such prohibited or unenforceable provision could be severed without impairing the interpretation and application of the remainder of the agreement or certificate, as the case may be;
- (h) the qualification that any provision in such agreement or certificate which purports to exculpate a party from liability or duty otherwise owed by it to another and certain remedial terms and waivers of equitable defences provided for in such agreement or certificate are limited by law; and
- (i) the qualification as to the enforceability of any provision in such agreement or certificate which purports to contract out of, vary or exclude the provisions of the Limitations Act, 2002 (Ontario).

This opinion has been prepared for your use in connection with the Registration Statement and is expressed as of the date hereof. Our opinion is expressly limited to the matters set forth above and we render no opinion, whether by implication or otherwise, as to any other matters relating to the Company, the Prospectus, the Registration Statement or the Offered Securities.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement. We also consent to the reference to our firm under the heading "Legal Matters" in the Registration Statement. In giving this consent, we do not thereby admit that we are in the category of persons whose consent is required under the Securities Act or the rules and regulations promulgated thereunder. This opinion is expressed as of the date hereof unless otherwise expressly stated, and we disclaim any undertaking to advise you of any subsequent changes of the facts stated or assumed herein or any subsequent changes in Applicable Law.

Yours very truly

/s/ McCarthy Tétrault LLP

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Consent of Independent Registered Public Accounting Firm

The Board of Directors
Aptose Biosciences Inc:

We consent to the use of our report dated July 29, 2014, with respect to the consolidated balance sheets of Aptose Biosciences Inc. as at May 31, 2014 and 2013, and the related consolidated statements of loss and comprehensive loss, changes in shareholders' equity and cash flows for each of the years in the three-year period ended May 31, 2014, and notes, comprising a summary of significant accounting policies and other explanatory information, incorporated herein by reference and to the reference to our firm under the heading "Experts" in the prospectus.

A handwritten signature in black ink that reads 'KPMG LLP' in a cursive, slanted font. A horizontal line is drawn underneath the signature.

Chartered Professional Accountants, Licensed Public Accountants
December 1, 2014
Toronto, Canada

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. KPMG Canada provides services to KPMG LLP.
