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

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of May 2016

Commission File Number: **001-32001**

Aptose Biosciences Inc.
(Translation of registrant's name into English)

5955 Airport Road, Suite 228
Mississauga, ON
L4V 1R9
(Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.
Form 20-F [X] Form 40-F [ ]

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

On May 10, 2016, the Registrant issued a press release, a copy of which is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

(c) Exhibit 99.1. Press release dated May 10, 2016

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Aptose Biosciences Inc.
(Registrant)

Date: May 10, 2016

/s/ Gregory K. Chow
Gregory K. Chow
Senior Vice President and Chief Financial Officer

EXHIBIT 99.1

Aptose Bioscience Reports Results for the First Quarter Ended March 31, 2016

SAN DIEGO and TORONTO, May 10, 2016 (GLOBE NEWSWIRE) -- Aptose Biosciences Inc. (NASDAQ:APTO) (TSX:APS), a clinical-stage company developing new therapeutics and molecular diagnostics that target the underlying mechanisms of cancer, today announced unaudited financial results for the three months ended March 31, 2016 and reported on corporate developments. Unless specified otherwise, all amounts are in Canadian dollars.

Net loss for the three months ended March 31, 2016 was $5.1 million ($0.42 per share) compared with $3.6 million ($0.30 per share) during the three months ended March 31, 2015. Total cash and cash equivalents and investments at March 31, 2016 were $15.0 million.

“During the first quarter we made considerable progress towards developing an improved methodology to create a stable formulation of APTO-253 for returning to the clinic,” said William G. Rice, Ph.D., Chairman, President and Chief Executive Officer. “Our team has diligently tested the performance of the drug product in the IV delivery system used for patients, as well as performed numerous manufacturing, formulation development and stability and solubility studies. We believe that we are close to defining a methodology that can deliver a clinical drug product of the utmost quality and functionality. We look forward to sharing our findings with the FDA, as we seek to re-initiate dosing at our existing Phase 1b clinical trial sites and initiating dosing at our new sites in patients with acute myeloid leukemia and other hematologic malignancies.”

Corporate Highlights

- During the first quarter, and in collaboration with a qualified formulation contract manufacturing organization (CMO), Aptose explored numerous methodologies to identify conditions that would enhance the solubility and stability properties of the APTO-253 formulation drug product.
- The company has made significant progress toward selecting a formulation methodology to manufacture a new batch of drug product that is unlikely to cause clogging of the in-line filters in the clinical setting.
- Aptose scientists demonstrated that, in addition to reversing the leukemogenic dysregulation of the KLF4 gene expression, APTO-253 inhibits expression of the c-Myc oncogene in a concentration and time-dependent manner in AML cells. The c-Myc oncogene is a major driver of cancer cell proliferation, and inhibition of c-Myc gene expression and c-Myc protein levels by APTO-253 suggests APTO-253 may have anti-cancer application among a host of hematologic malignancies and solid tumors.
- Aptose’s clinical team has prepared additional clinical sites at major cancer research and treatment centers in preparation to enroll patients for dosing of APTO-253. The expedited engagement of these new sites is intended to ensure an accelerated pace of patient accrual in the company’s ongoing Phase 1b clinical study after lifting of the clinical hold.
- Subsequent to the quarter end, the company issued 115,927 common shares under the at-the-market facility for gross proceeds of approximately US $297 thousand.

Financial Results

Net loss for the three months ended March 31, 2016 was $5.1 million ($0.42 per share) compared with $3.6 million ($0.30 per share) during the three months ended March 31, 2015. The increase in net loss is due to increased research and development costs related to APTO-253, as well as a foreign exchange loss on USD cash and cash equivalents balances due to the appreciation of the Canadian dollar during the quarter.

Aptose utilized cash of $4.5 million in operating activities in the three months ended March 31, 2016 compared with $2.2 million in the three months ended March 31, 2015. The increase in cash used in operating activities in the current period is due to an increased net loss compared with the prior year, as well as a reduction in accounts payable and accrual balances during the quarter compared with an increase in these balances in the three months ended March 31, 2015.

Research and Development

Research and development expenses totaled $2.3 million in the three months ended March 31, 2016 compared to $884 thousand in the prior year period. Research and development costs consist of the following:

Components of research and development expenses:

	Three months ended	
(in thousands)	**March 31, 2016**	March 31, 2015
Program costs	**$ 2,247**	$ 860
Stock-based compensation	**56**	19
Depreciation of equipment	**12**	5
	$ 2,315	$ 884

The increase in research and development costs in the three months ended March 31, 2016 compared with the three months ended March 31,

2015 is due to the following reasons:

- Costs associated with the LALS/Moffitt collaboration developing epigenetic single molecule inhibitors of multiple targets, including the bromodomain and extraterminal domain (BET) proteins, and other kinases for which no comparable expenses existed in the prior year;
- Formulation and manufacturing costs associated with APTO-253 and the root cause analysis of the filter clogging identified in November 2015;
- Increased Contract Research Organization costs related to consultants and advisors as the company works towards returning APTO-253 to the clinic; and
- Increased research and clinical operations headcount.

Stock-based compensation costs allocated to research and development increased in the three months ended March 31, 2016 to reflect option grants to new employees.

General and Administrative
General and administrative expenses totaled $2.6 million for the three months ended March 31, 2016 compared to $2.7 million in the three months ended March 31, 2015. General and administrative expenses consist of the following:

Components of general and administrative expenses:

	Three months ended	
(in thousands)	**March 31, 2016**	March 31, 2015
General and administrative excluding salaries	**$ 1,133**	$ 1,029
Salaries	**975**	753
Stock-based compensation	**479**	940
Depreciation of equipment	**21**	7
	$ 2,608	$ 2,729

General and administrative costs excluding salaries are higher in the three months ended March 31, 2016 compared with the prior year due to higher rent costs associated with an additional office location, additional patent costs due to timing, as well as a depreciation in the Canadian dollar compared with the prior year period which has resulted in an increase to the cost of our US dollar denominated expenditures.

Increased salary costs have increased in the three months ended March 31, 2016 compared with the prior year due to additional headcount, the establishment of a benefits plan for employees in the United States and higher Canadian dollar salary costs for our US employees due to the lower value of the Canadian dollar during the three month period.

Stock-based compensation costs decreased in the three months ended March 31, 2016 compared with prior year due to large option grants in June and July 2014 which vested 50% during the first year and therefore contributed to higher stock based compensation expense during the first twelve-month period.

Finance Expense
Finance expense for the three months ended March 31, 2016 was $196 thousand compared with $60 thousand for the three months ended March 31, 2015. Finance expense includes the following items:

	Three months ended	
(in thousands)	**March 31, 2016**	March 31, 2015
Interest expense	**$ −**	$ 20
Foreign exchange loss	**196**	40
	$ 196	$ 60

Interest expense for the three months ended March 31, 2015 relates to interest accrued at a rate of 10% on the remaining balance of convertible promissory notes issued in September 2013 as well as accretion expense related to the conversion feature of the notes. All of the promissory notes have now been converted into common shares.

Foreign exchange loss in the three months ended March 31, 2016 is the result of a decrease in the value of our US dollar denominated cash and cash equivalents balances during the period due to the appreciation of the Canadian dollar compared to the US dollar.

Finance Income
Finance income, consisting solely of interest income, totaled $47 thousand in the three months ended March 31, 2016 compared to $104 thousand in the three months ended March 31, 2015. Interest income represents interest earned on cash and cash equivalent and investment balances.

Aptose Biosciences Inc.

Condensed Consolidated Interim Statements of Loss and Comprehensive Loss
(unaudited)

(amounts in 000's of Canadian Dollars except for per common share data)	**Three months ended March 31, 2016**	Three months ended March 31, 2015
REVENUE	**$ -**	$ -
EXPENSES		
Research and development	**2,315**	884
General and administrative	**2,608**	2,729
Operating expenses	**4,923**	3,613
Finance expense	**196**	60
Finance income	**(47)**	(104)
Net financing income	**149**	(44)
Net loss and comprehensive loss for the period	**5,072**	3,569
Basic and diluted loss per common share	**$ 0.42**	$ 0.30

The press release, the financial statements and the management's discussion and analysis for the quarter ended March 31, 2016 will be available on SEDAR at www.sedar.com and EDGAR at www.sec.gov/edgar.shtml

Conference Call and Webcast

Aptose will host a conference call to discuss results for the three months ended March 31, 2016 today, Tuesday, May 10, 2016 at 5:00 p.m. EDT. Participants can access the conference call by dialing toll-free (844) 882-7834 (North America toll free number) or (574) 990-9707 (international toll free number), using the conference call passcode 4120359. The conference call can also be accessed at http://edge.media-server.com/m/p/8mvqp7n3 and will be available through a link on the Investor Relations section of Aptose's website at ir.aptose.com. Please log onto the webcast at least 10 minutes prior to the start of the call to ensure time for any software downloads that may be required. An archived version of the webcast along with a transcript will be available on the company's website for 30 days.

An audio replay of the webcast will be available approximately two hours after the conclusion of the call for 7 days by dialing (855) 859-2056, using the passcode 4120359.

Note

The information contained in this news release is unaudited.

About Aptose

Aptose Biosciences is a clinical-stage biotechnology company committed to discovering and developing personalized therapies addressing unmet medical needs in oncology. Aptose is 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. 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. For further information, please visit www.aptose.com.

Forward Looking Statements

This press release contains forward-looking statements within the meaning of Canadian and U.S. securities laws. Such statements include, but are not limited to, statements that APTO-253 will return to the clinic and relating to the process to have the clinical hold lifted by the FDA, that we will be able to manufacture APTO-253 in a soluble and stable formulation, that it will be possible to accelerate enrollment if or when we return to the clinic, the anti-cancer application of APTO-253 among a host of hematologic malignancies and solid tumors and statements relating to the Company's plans, objectives, expectations and intentions and other statements including words such as "continue", "expect", "intend", "will", "should", "would", "may", and other similar expressions. Such statements reflect our current views with respect to future events and are subject to risks and uncertainties and are necessarily 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 described in this press release. Such factors could include, among others: our ability to obtain the capital required for research and operations; the inherent risks in early stage drug development including demonstrating efficacy; development time/cost and the regulatory approval process; the progress of our clinical trials; our ability to find and enter into agreements with potential partners; our ability to attract and retain key personnel; changing market conditions; uncertainty in the length of the clinical hold and the conditions the FDA may impose to lift it; potential loss of API; inability of new manufacturers to produce acceptable batches of GMP in sufficient quantities; unexpected manufacturing defects; and other risks detailed from time-to-time in our ongoing quarterly filings, annual information forms, annual reports and annual filings with Canadian securities regulators and the United States Securities and Exchange Commission.

Should one or more of these risks or uncertainties materialize, or should the assumptions set out in the section entitled "Risk Factors" in our filings with Canadian securities regulators and the United States Securities and Exchange Commission underlying those forward-looking statements prove incorrect, actual results may vary materially from those described herein. These forward-looking statements are made as of the date of this press release and we do not intend, and do not assume any obligation, to update these forward-looking statements, except as required by law. We cannot assure you that such statements will prove to be accurate as actual results and future events could differ materially from those anticipated in such statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

For further information, please contact:

Aptose Biosciences
Greg Chow, CFO
647-479-9828
gchow@aptose.com

BCC Partners
Karen L. Bergman or Susan Pietropaolo
650-575-1509 or 845-638-6290
kbergman@bccpartners.com or spietropaolo@bccpartners.com