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 March 2017

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 March 28, 2017, 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 March 28, 2017

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: March 28, 2017

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

EXHIBIT 99.1

Aptose Reports Fourth Quarter and Year End 2016 Results

SAN DIEGO and TORONTO, March 28, 2017 (GLOBE NEWSWIRE) -- Aptose Biosciences Inc. (NASDAQ:APTO) (TSX:APS), a clinical-stage company developing highly differentiated therapeutics that target the underlying mechanisms of cancer, today announced financial results for the three months and fiscal year ended December 31, 2016 and reported on corporate developments. Unless specified otherwise, all amounts are in Canadian dollars.

The net loss for the year ended December 31, 2016 was $18.6 million ($1.46 per share) compared with $14.6 million ($1.23 per share) in the year ended December 31, 2015. Total cash and cash equivalents and investments as of December 31, 2016 were $10.7 million (or $7.9 million US Dollars).

“We began 2017 by reviewing our corporate strategy and refocusing our resources on CG’806, an oral first-in-class pan-FLT3/BTK inhibitor we are developing for patients with FLT3-driven AML and certain B-cell malignancies,” said William G. Rice, Ph.D., Chairman, President and Chief Executive Officer. “Preclinical studies with CG‘806 have demonstrated a unique activity profile which warranted the prioritization of resources toward advancing its development. We look forward to reporting on our progress with this molecule.”

Corporate Highlights

- In January 2017, Aptose announced the prioritization of its resources toward the development of CG’806, an oral preclinical compound being developed for patients with FLT3-driven acute myeloid leukemia (AML) and certain BTK-driven B-cell malignancies.

- In June 2016, Aptose entered into an exclusive global option and license agreement with CrystalGenomics, Inc. of South Korea, focused on the development of CG’806. Aptose is currently conducting Investigational New Drug (IND) enabling studies, and, if it exercises its option under the agreement, expects to initiate a Phase 1 clinical trial in early 2018. The potential option exercise would likely occur prior to submission of an IND application in the U.S. Upon exercise of the option, Aptose would own global rights to develop and commercialize the program outside of Korea and China.

- Compelling preclinical data have established CG’806 as a potent and well-differentiated pan-FLT3 inhibitor for AML and a non-covalent inhibitor of BTK and other oncogenic kinases that drive certain B-cell derived cancer cells. The compound has demonstrated tumor elimination in the absence of toxicity in AML xenograft models.

- Aptose recently developed a new synthetic route to synthesize greater amounts of CG’806, and is using that route to prepare drug substance for various preclinical and animal model studies, and for development of an improved oral formulation. The compound is being developed as a once-daily oral therapeutic.

- The company has submitted research abstracts to present CG’806 data at the upcoming AACR-Hematologic Malignancies Meeting in May 2017.

- Aptose temporarily delayed clinical activities with APTO-253, a phase 1 stage compound for AML, in an effort to define the root cause of recent manufacturing setbacks related to the intravenous formulation, and to restore the molecule to a state supporting clinical development and potential partnering. Aptose remains hopeful in the viability of APTO-253, which effectively inhibits expression of the c-Myc oncogene, as a potential treatment for AML.

Financial Results

THREE MONTHS ENDED DECEMBER 31, 2016 AND 2015 (UNAUDITED)

(Amounts in 000’s except for per common share data)	**Dec 31, 2016**	**Dec 31, 2015**
Revenue	$ —	$ —
Research and development expense	2,550	2,340
General and administrative expense	1,461	2,364
Operating expenses	**4,011**	**4,794**
Finance expense	–	–
Finance income	(85)	(273)
Net financing income	(85)	(273)
Net loss	**3,926**	**(4,431)**
Basic and diluted net loss per share	**$ (0.26)**	**$ (0.38)**

Aptose’s net loss for the three months ended December 31, 2016 was $3.9 million ($0.26 per share) compared with $4.4 million ($0.38 per share) in the same period in the prior year.

Research and development costs increased to $2.6 million in the three months ended December 31, 2016 compared with $2.3 million for the

three months ended December 2015. Aptose incurred higher costs for formulation studies and manufacturing costs for the APTO-253 product in the three months ended December 31, 2016 than in the comparable period, and these were offset by lower expenses for the contract research organization costs to manage the study. In addition, in the current period Aptose was conducting studies related to its CG'806 program following the licensing of the technology in June 2016.

General and administrative expenses decreased to $1.5 million in the three months ended December 31, 2016 compared with $2.4 million in the three months ended December 31, 2015. The decrease, despite the increased cost of Aptose's US dollar expenditures due to the devaluation of the Canadian dollar, is related to lower stock option compensation and lower consulting fees related to projects that were active and completed in the fourth quarter in 2015.

FULL YEAR RESULTS

(amounts in 000's of Canadian Dollars except for per common share data)	Year ended Dec. 31, 2016	Year ended Dec. 31, 2015
REVENUE	$ -	$ -
EXPENSES		
Research and development	10,322	6,254
General and administrative	8,344	9,845
Operating expenses	18,666	16,099
Finance expense	66	43
Finance income	(105)	(1,556)
Net financing (income) expense	(39)	(1,473)
Net loss and comprehensive loss for the period	18,627	14,626
Basic and diluted loss per common share	$ 1.46	$ 1.23
Weighted average number of common shares	12,743	11,906

RESEARCH AND DEVELOPMENT

Research and development expenses totaled $10.3 million in the year ended December 31, 2016 compared with $6.3 million in the year ended December 31, 2015. Research and development costs consist of the following:

	Year ended December 31, 2016	Year ended December 31, 2015
Research and Development excluding salaries	$ 6,442	$ 4,046
CrystalGenomics Option Fee	1,294	-
Salaries	2,246	1,969
Stock-based compensation	293	210
Depreciation of equipment	47	29
	$ 10,322	$ 6,254

Expenditures for the year ended December 31, 2016 increased significantly over the year ended December 31, 2015 due to the following reasons:

- Research and development activities related to the option fee for CG'806;
- Costs associated with the LALS/Moffitt collaboration developing epigenetic single molecule inhibitors of multiple targets, including the BET proteins, and other kinases for which no comparable expenses existed in the prior year periods;
- Increased research and clinical operations headcount and related costs;
- Formulation and manufacturing costs associated with APTO-253 and the root cause analysis of the filter clogging identified in November 2015; and
- Increased Contract Research Organization costs related to consultants and advisors as we worked towards returning APTO-253 to the clinic.

During the year ended December 31, 2016, Aptose paid US$1.0 million ($1.294 million) to CrystalGenomics for an option fee related to the CG'806 technology. Should Aptose elect to exercise the option prior to filing of an IND application with the FDA, we would pay an additional US$2.0 million in cash or combination of cash and common shares, and would receive full development and commercial rights for the program in all territories outside of Korea and China. No comparable expense existed in the same period in the prior year.

GENERAL AND ADMINISTRATIVE

General and administrative expenses totaled $8.3 million in the year ended December 31, 2016 compared to $9.8 million in the year ended December 31, 2015. General and administrative expenses consisted of the following:

	Year ended December 31, 2016	Year ended December 31, 2015
General and administrative excluding salaries	$ 3,412	$ 4,317
Salaries	3,095	2,859
Stock-based compensation	1,730	2,602
Depreciation of equipment	107	67
	$ 8,344	$ 9,845

General and administrative expenses excluding salaries, decreased in the year ended December 31, 2016 compared with the year ended December 31, 2015. The decrease is the result of lower travel, consulting and legal costs in the current year related to transactions completed in the prior year as well as lower press release and filing costs associated with a lower cost service provider in the current year periods.

Salary charges in the year ended December 31, 2016 increased in comparison with the year ended December 31, 2015 due to additional headcount in the first half of 2016 compared with the first half of 2015 as well as a higher average CA/US exchange rate which increased the cost of Aptose's US denominated salaries in the first six months of 2016 in comparison with the prior year, and higher bonus expenses recognized in the current period.

Stock-based compensation decreased in the year ended December 31, 2016 compared with the year ended December 31, 2015 due to large option grants in April, June and July 2014 which vested 50% during the first year and therefore contribute to higher stock-based compensation expense during the first twelve month period captured in the prior year period.

FINANCE INCOME

Finance income totaled $105 thousand in the year ended December 31, 2016 compared to $1.5 million in the year ended December 31, 2015.

Interest income represents interest earned on Aptose's cash and cash equivalent and investment balances. Foreign exchange gains are the result of an increase in the value of US dollar denominated cash and cash equivalents balances during such periods due to a depreciation of the Canadian dollar compared to the US dollar.

About Aptose

Aptose Biosciences is a clinical-stage biotechnology company committed to 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. 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, including, but not limited to, statements relating to the focus of resources on CG'806, the potential exercise of option to acquire the rights on CG'806, the timing for the commencement of clinical trials, the clinical potential and favorable properties of CG'806, the clinical potential of APTO-253 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 and economic conditions; 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.

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