May 10, 2018

Aptose Reports Results for the First Quarter Ended March 31, 2018

Conference Call and Webcast at 5pm EDT Today

SAN DIEGO and TORONTO, May 10, 2018 (GLOBE NEWSWIRE) -- Aptose Biosciences Inc. (“Aptose” or the “Company”) (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 ended March 31, 2018 and reported on corporate developments. Unless specified otherwise, all amounts are in US dollars.

The net loss for the quarter ended March 31, 2018 was $6.8 million ($0.23 per share) compared with $3.3 million ($0.19 per share) in the quarter ended March 31, 2017 and total cash used in operating activities was $4.1 million compared with $2.7 million in the quarter ended March 31, 2018. Total cash and cash equivalents and investments as of March 31, 2018 were $16.2 million (which, based on current operations, provide the Company with sufficient resources to fund research and development and operations into Q2 2019). In the quarter ended March 31, 2018, Aptose raised $8.9 million from the Common Shares Purchase Agreement with Aspire Capital and subsequent to March 31, we raised a further $6.1 million with Aspire Capital under this same agreement.

“CG-806, our highly potent non-covalent pan-FLT3/pan-BTK inhibitor, continues on track with IND-enabling studies,” said William G. Rice, Ph.D., Chairman, President and Chief Executive Officer. “In parallel, new preclinical data on CG-806 presented at AACR demonstrate its breadth and potency of activity against patient-derived AML and CLL cells and superiority to other kinase inhibitors. For our clinical-stage compound APTO-253, we made notable progress in manufacturing and qualification studies required to return the new drug product to the clinic. We also presented new mechanistic data for APTO-253 at AACR, demonstrating heightened sensitivity of BRCA1 or BRCA2 mutated cancer cells to APTO-253 and opening the door to genetically-defined solid tumor indications for the molecule.”

Corporate Highlights

- **CG-806 preclinical data presented at AACR**– At the 2018 American Association for Cancer Research (AACR) Conference held in April, researchers from Oregon Health & Science University (OHSU) Knight Cancer Institute and Aptose presented preclinical data demonstrating that CG-806, a highly potent pan-FLT3/pan-BTK inhibitor, kills malignant cells in samples freshly collected from patients with various hematologic malignancies and demonstrates superiority to other kinase inhibitors. CG-806 was shown to have greater potency against a broader set of AML samples relative to other FLT3 inhibitors, including midostaurin, gilteritinib, quizartinib, sorafenib, crenolanib, and dovitinib. Separately, CG-806 was also shown to have greater potency and range

of activity than ibrutinib on patient-derived CLL samples.

An additional study presented by Aptose explored the potency of CG-806 in hematologic malignancies relative to other FLT3 or BTK inhibitors commercialized or in development. CG-806 induced apoptosis through inhibition of key multiple signaling pathways that were specific to each sample of AML or B-cell cancer cells. CG-806 was also superior to other FLT3 inhibitors against FLT3-wild type (WT) AML cells, as well as AML cells housing various mutant forms of FLT3. Collectively, the data demonstrated the ability of CG-806 to target all WT and mutant forms of FLT3 and BTK and to inhibit multiple signaling pathways, producing killing of diverse subtypes of hematologic malignancies driven by different genomic aberrations.

- **New mechanistic data on APTO-253 presented at AACR**– Also at AACR, the Aptose research team presented data showing that APTO-253 stabilizes a G-quadruplex DNA structure in the MYC gene promoter, leading to suppression of MYC expression and induction of programmed cell death in AML cells. The action of APTO-253 on separate G-quadruplexes induces the DNA damage response in cancer cells and exhibits synthetic lethality comparable to olaparib – an FDA-approved targeted therapy that acts against cancers in people with hereditary BRCA1 or BRCA1 mutations, including some ovarian, breast and prostate cancers – albeit through a different mechanism. Unlike other drugs for which loss of this DNA repair function results in hypersensitivity, APTO-253 does not produce myelosuppression, even at the maximum tolerated dose. These findings open the window to how APTO-253 might be used clinically to treat certain solid tumor patients with tumors harboring deficiencies in DNA repair.

- **Completed manufacture of APTO-253 cGMP clinical supply** – The Company completed the manufacture of the cGMP clinical supply that will be required for the potential return of APTO-253 to the clinic, and the new clinical supply has completed and passed stability, sterility, mock infusion, animal bridging and blood compatibility studies. Aptose plans to submit these findings to the FDA during the 2nd Quarter of 2018 to seek release of the CMC-related clinical hold and allow return of APTO-253 to dosing in the open Phase 1b trial in patients with acute myeloid leukemia (AML) or myelodysplastic syndrome (MDS).

- **CG-806 pre-IND progress** – Aptose successfully manufactured CG-806 drug substance and formulated drug product, and then performed animal dose range finding preclinical studies in rodents and dogs, and successfully dosed up to 1000 mg/kg/day, the maximum feasible dose. The Company is currently manufacturing a drug batch that will be used for IND-enabling GLP animal toxicology studies that are planned to begin during the 2nd quarter of 2018.

- **Appointment of New Board Member** – In April, Aptose announced the appointment of Caroline M. Loewy to its Board of Directors. Ms. Loewy is an accomplished and respected executive leader with more than 25 years of experience in accelerating biotechnology product development and growth. She currently provides strategic advisory services to life science companies on a variety of high-impact matters including funding strategies, product pipeline evaluation, and assessing business development opportunities. Prior, she held numerous executive roles, including that of

Chief Financial Officer at several public and private biopharmaceutical companies, and senior biotechnology research analyst at Morgan Stanley and Prudential Securities. Aptose's Board of Directors now includes seven members with extensive biotechnology and pharmaceutical experience.

- **Early Exercise of Option for CG-806 License** – In May, Aptose exercised its option under the 2016 Option Agreement to exclusively license CG-806 from CrystalGenomics, Inc. With the early exercise of the option, Aptose owns global rights to develop and commercialize CG-806 for all indications outside of Korea and China – the Licensed Territory. The exercise triggered a payment of $2.0 million to CrystalGenomics, and CrystalGenomics is eligible for regulatory and sales milestone payments, as well as royalties on product sales in the Licensed Territory.

- **New Base Shelf Prospectus Filing and New At-The-Market Facility** – As previously announced in February, Aptose filed a new Base Shelf Prospectus in Canada, and a registration statement with the SEC, which allows the Company to offer up to $100,000,000 of common shares, warrants to purchase common shares or units comprised of one or more of these securities, for a period of 25 months. This provides Aptose with flexibility to raise capital to fund operations, R&D and potential upcoming clinical trials. Subsequently in March, Aptose entered into a new At-The-Market (ATM) Facility to replace the ATM Facility that expired in December 2017.

Financial Results

	Three months ended March 31,	
(in thousands)	**2018**	2017
Revenues	**$ -**	$ -
Research and development expenses	**3,140**	1,735
General and administrative expenses	**3,702**	1,590
Net finance income	**26**	33
Net loss and comprehensive loss for the period	**$ 6,816**	$ 3,292
Basic and diluted loss per common share	**$ 0.23**	$ 0.19

The increase in the net loss during the three months ended March 31, 2018 compared with the three months ended March 31, 2017 results mostly from $2.2 million in non-cash expenses related to stock option compensation recorded in the current period, higher research and development expenses related to our CG-806 program, higher manufacturing and testing expenses related to APTO-253, and higher professional fees related to regulatory filings in support of financing activities.

The research and development expenses for the three months ended March 31, 2018 and 2017 are as follows:

	Three months ended March 31,	
(in thousands)	**2018**	2017
Program costs – CG-806	**$ 1,354**	$ 407
Program costs – APTO-253	**921**	840
Salaries	**489**	429

Stock-based compensation		**367**		50
Depreciation of equipment		**9**		9
	$	**3,140**	$	1,735

The changes in research and development expenses in the three months ended March 31, 2018 as compared to the three months ended March 31, 2017 result from the following:

- An increase in research and development activities related to our CG-806 development program. Activities in the current period ended March 31, 2018 included the completion of two dose range finding studies and the manufacturing of a batch of the drug substance to be used in toxicity studies. In the comparative period, the CG-806 program included formulation and PK studies.
- An increase in expenditures on the APTO-253 program. In the period ended March 31, 2018, we completed production of a cGMP batch of drug product, and initiated necessary qualification studies to present to the FDA. In the comparative period the company had put this program on hold due to a manufacturing issue.
- An increase in salaries expense mostly related to additional clinical research staff hired at the end of 2017 to prepare for returning APTO-253 to the clinic.
- An increase in stock option compensation related mostly to stock options granted in the current period of which 100,000 with a grant date fair value of $2.03 vested immediately.

The general and administrative expenses for the three months ended March 31, 2018 and 2017 are as follows:

	Three months ended March 31,			
(in thousands)		**2018**		2017
General and administrative excluding salaries	**$**	**1,293**	$	708
Salaries		**541**		858
Stock-based compensation		**1,861**		10
Depreciation of equipment		**7**		14
	$	**3,702**	$	1,590

General and administrative expenses excluding salaries increased in the three months ended March 31, 2018, compared with the three months ended March 31, 2017. The increase is mostly the result of higher professional fees related to regulatory filings for the base shelf prospectus and a follow on supplemental prospectus filed in the current period, higher investor relations, higher patent fees associated with our expanded IP portfolio, and higher office administrative costs associated with having additional employees. Salaries expenses in the three months ended March 31, 2018, decreased in comparison with the three months ended March 31, 2017, due mostly to separation payments made in the period ended March 31, 2017.

Stock-based compensation increased in the three months ended March 31, 2018, compared with the three months ended March 31, 2017 mostly related to stock options granted in the current period, of which 750,000 with a grant date fair value of $2.03 vested immediately, and also as a result of large forfeitures in the three months ended March 31, 2017.

Conference Call and Webcast

Aptose will host a conference call today, Thursday, May 10, 2018 at 5:00 p.m. EDT to discuss results for the three months ended March 31, 2018. Participants can access the conference call by dialing (844) 882-7834 (North American toll-free number) and (574) 990-9707 (International) and using conference ID # 2094769. The conference call webcast can be accessed here and will also be available through a link on the Investor Relations section of Aptose's website at ir.aptose.com. 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 through May 24, 2018 by dialing (855) 859-2056, using the conference ID # 2094769.

The live conference call can also be accessed 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.

Note

The information contained in this news release is unaudited.

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 expected cash runway of the Company, the clinical potential and favorable properties of CG-806, the clinical trials for CG-806, the clinical potential and development of APTO-253, the potential return of APTO-253 to the clinic, 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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