June 15, 2018

Aptose Presents New CG-806 Data at the 23rd Congress of the European Hematology Association

CG-806 Continues to Demonstrate Superior Activity to Ibrutinib BTK Inhibitor

STOCKHOLM, Sweden and SAN DIEGO, June 15, 2018 (GLOBE NEWSWIRE) -- Aptose Biosciences Inc. (NASDAQ:APTO) (TSX:APS) today announced the presentation of preclinical data demonstrating that CG-806, a highly potent pan-FLT3/pan-BTK inhibitor, exhibits a distinct mechanism of action and greater potency on patient-derived hematologic cancer cells than ibrutinib, a BTK inhibitor approved for the treatment of certain hematologic malignancies. The data were presented in a poster on Friday, June 15, at the 23rd Congress of the European Hematology Association (EHA), taking place June 14-17, 2018 in Stockholm, Sweden.

CG-806 is an oral small molecule pan-FLT3/pan-BTK inhibitor being developed by Aptose for acute myeloid leukemia (AML) and B-cell malignancies. It is a highly potent, reversible (non-covalent) inhibitor of the wild type and mutant forms of the Bruton's tyrosine kinase (BTK) enzymes. Ibrutinib, a covalent BTK inhibitor approved for chronic lymphocytic leukemia (CLL) and certain B-cell malignancies, is limited by acquired resistance, as well as refractory disease and tolerance challenges.

The poster, entitled ***CG'806, A NON-COVALENT PAN-FLT3/PAN-BTK INHIBITOR, EXHIBITS UNIQUE BINDING TO WILD TYPE AND C481S MUTANT BTK AND GREATER POTENCY THAN IBRUTINIB AGAINST MALIGNANT B CELLS***, compared CG-806 and ibrutinib with respect to BTK binding mode, kinase inhibition profiles and cytotoxic activity against patient-derived and cultured malignant B-cells. Kinase profiling revealed that CG-806 most potently inhibits kinases from the BTK, FLT3, TRK, and AURK clusters and had similar potency against BTK-WT (IC_{50} = 8.4 nM) and C481S mutant (IC_{50} = 2.5 nM), as opposed to ibrutinib that was >60-fold less potent against the C481S mutant. CG-806 did not inhibit TEC, EGFR or ERBB2/4, which are related to ibrutinib's side effects; CG-806 also demonstrated a favorable safety profile. CG-806 inhibited cell proliferation 2-6,000 times more potently than ibrutinib in 14 tested malignant B-cell lines; it also had greater activity on primary CLL samples than ibrutinib.

"A safe and potent agent that inhibits all forms of BTK and other key rescue pathways (including AKT/PI3K, ERK and NFκB) is needed for patients intolerant, refractory and resistant to ibrutinib," said William G. Rice, Ph.D., Chairman, President and Chief Executive Officer. "These data strongly support the clinical development of CG-806 to address the limitations and challenges of ibrutinib. CG-806 is being readied for the clinic and we look forward to reporting on its development."

The EHA poster can be accessed here or at the Publications & Presentations section of the Aptose website, www.aptose.com.

About CG-806

CG-806 is an oral, first-in-class pan-FLT3/pan-BTK multi-kinase inhibitor. This small molecule demonstrates potent inhibition of wild type and mutant forms of FLT3 (including internal tandem duplication, or ITD, and mutations of the receptor tyrosine kinase domain and gatekeeper region), eliminates acute myeloid leukemia (AML) tumors in the absence of toxicity in murine xenograft models, and represents a potential best-in-class therapeutic for patients with AML. Likewise, CG-806 demonstrates potent, non-covalent inhibition of the wild type and Cys481Ser mutant forms of the BTK enzyme, as well as other oncogenic kinase pathways operative in B cell malignancies, suggesting CG-806 may be developed for various B cell malignancy patients (including CLL, MCL, DLBCL and others) that are resistant/refractory/intolerant to covalent BTK inhibitors.

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 regarding the clinical potential and favorable properties of CG-806, 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”, “potential” 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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Source: Aptose Biosciences, Inc.