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Aptose Presents Preliminary Clinical Data on CG-806 at AACR Virtual Annual Meeting 2020

Data from patients at first two dose levels; Phase 1a/b study is ongoing

SAN DIEGO and TORONTO, April 27, 2020 (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 presented the early clinical data on CG-806, the company's oral, first-in-class FLT3/BTK cluster selective kinase inhibitor, at the AACR Virtual Annual Meeting I (April 27-28), in lieu of the live oral presentation originally planned.

Rafael Bejar M.D., Ph.D., Aptose's Chief Medical Officer, presented a video summary of **Abstract # 9967 -*Early clinical findings from a phase 1a/b dose escalation trial to evaluate the safety and tolerability of CG-806 in patients with relapsed or refractory CLL/SLL or non-Hodgkin's lymphomas [link].***

The first-in-human tests of CG-806 are being carried out in a Phase 1a/b clinical study. The target population in the study includes patients with significant unmet needs including patients with relapsed or refractory chronic lymphocytic leukemia (CLL), small lymphocytic leukemia (SLL) or non-Hodgkin lymphoma (NHL) who have failed or been intolerant to two lines of established therapy. CG-806 is administered as oral capsules dosed twice daily in 28-day cycles. The study design includes an accelerated titration followed by a 3+3 dose escalation to establish the recommended Phase 2 dose for planned expansion cohorts and future studies.

The first patient, treated with 150 mg BID of CG-806, was heavily pretreated, carried a TP53 mutation, and had severe thrombocytopenia prior to study entry. This patient currently is in the eleventh cycle of therapy without having experienced a dose-limiting toxicity (DLT) and has been dose escalated to the 450 mg BID dose level.

The second patient, treated at the 300 mg BID dose level, had significant marrow involvement with neutropenia and thrombocytopenia at study entry, and developed a brisk lymphocytosis, but did not experience a DLT through four cycles of therapy including no worsening of their thrombocytopenia or neutropenia.

The study has now completed three dose levels without observing any drug-related severe adverse events (SAE) and has not reached a dose-limiting toxicity. Three patients completed the safety evaluation period at the third dose level, 450 mg BID, and as a result, the fourth dose level was opened. The first patient, previously dosed at 150 mg BID was dose escalated to dose level 3 at 450 mg BID. Enrollment is open and dosing is ongoing at the

600 mg BID dose level with no drug-related SAEs or DLTs encountered to date.

Key findings to date:

- No drug-related SAEs or DLTs have been observed in patients to date
- CG-806 demonstrates favorable steady state pharmacokinetics evidenced by stable trough plasma concentrations reached by Day 8 in the first two patients treated at dose levels 1 and 2
- CG-806 has shown on-target pharmacologic activity demonstrated by plasma inhibitory assays with reporter cells exposed to patient plasma for 6 hours
- Phospho-BTK is markedly reduced after exposure to plasma from the patient treated at dose level 1 and completely abrogated with plasma form the patient treated at dose level 2
- Similar results are seen for the phosphorylation of PDGFR-alpha, a target of CG-806, for SYK, which lies in the same signaling pathway as BTK and for ERK
- Lymphocytosis was noted at dose level 2 – pharmacologic BTK inhibition in CLL promotes exfiltration

Dr. Bejar summarized the team's findings: "CG-806 is a novel and unique cluster selective kinase inhibitor with activity against clinically validated targets in both lymphoid and myeloid malignancies through its potent inhibition of BTK and FLT3. The ongoing Phase 1 study in relapsed/refractory B-cell malignancies has demonstrated the safety of CG-806 to date, pharmacologic activity, and predictable pharmacokinetic behavior. We look forward to presenting new data from higher dose cohorts at a future medical meeting."

The slide deck of this presentation is available on the Aptose website https://www.aptose.com/product-pipeline/posters-presentations.

About CG-806

CG-806 is an oral, first-in-class FLT3/BTK cluster selective kinase inhibitor and is in Phase 1 clinical studies for the treatment of hematologic malignancies. This small molecule, demonstrates potent inhibition of wild type and all mutant forms of FLT3 (including internal tandem duplication, or ITD, and mutations of the receptor tyrosine kinase domain and gatekeeper region), cures animals of AML in the absence of toxicity in murine xenograft models, and represents a potential best-in-class therapeutic for patients with AML and other myeloid malignancies. Likewise, CG-806 demonstrates potent, non-covalent inhibition of the wild type and Cys481Ser (C481S) 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/SLL, FL, MCL, DLBCL and others) that are resistant/refractory/intolerant to covalent or other non-covalent BTK inhibitors. Because CG-806 targets key kinases/pathways operative in malignancies derived from the bone marrow, it is in development for B-cell cancers and AML.

About Aptose Biosciences

Aptose Biosciences is a clinical-stage biotechnology company committed to developing personalized therapies addressing unmet medical needs in oncology, with an initial focus on hematology. 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. The Company has two clinical-stage investigational products for hematologic malignancies: CG-806, an oral, first-in-class mutation-agnostic FLT3/BTK kinase inhibitor, is in a Phase 1 trial in patients with relapsed or refractory B cell malignancies, including chronic lymphocytic leukemia (CLL), small lymphocytic lymphoma (SLL) and non-Hodgkin lymphoma (NHL), who have failed or are intolerant to standard therapies; APTO-253, the only clinical stage agent that directly targets the MYC oncogene and suppresses its expression, is in a Phase 1b clinical trial for the treatment of patients with relapsed or refractory acute myeloid leukemia (AML) or high risk myelodysplastic syndrome (MDS). For further information, please visit www.aptose.com

For further information, please contact:

Aptose Biosciences Inc.
Greg Chow
Executive Vice President, CFO
650-718-5028
gchow@aptose.com

LifeSci Advisors, LLC
Dan Ferry, Managing Director
617-535-7746
Daniel@LifeSciAdvisors.com

SMP Communications
Susan Pietropaolo
201-923-2049
susan@smpcommunications.com

Source: Aptose Biosciences, Inc.