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Aptose Clinical and Preclinical Data to be Presented at European School of Haematology (ESH) 6th International Conference

Company to Hold Clinical Update Webcast; Details Forthcoming

SAN DIEGO and TORONTO, Oct. 16, 2023 (GLOBE NEWSWIRE) -- Aptose Biosciences Inc. ("Aptose" or the "Company") (NASDAQ: APTO, TSX: APS), a clinical-stage precision oncology company developing highly differentiated oral kinase inhibitors to treat hematologic malignancies, today announced that two abstracts on tuspetinib, Aptose's Phase 1/2 myeloid kinase inhibitor in development for acute myeloid leukemia (AML), have been accepted for poster presentations at the European School of Haematology (ESH) 6th International Conference: Acute Myeloid Leukemia "Molecular and Translational": Advances in Biology and Treatment, being held October 29-31, 2023, in Estoril, Portugal.

Aptose is planning to hold a clinical update webcast on October 30, 2023, to provide additional up-to-date data on tuspetinib. Details will be forthcoming.

The posters accepted for presentation are listed below and can be viewed beginning October 29, 2023, on site at the ESH poster exhibit hall and online on the Aptose website [here](#).

Poster Presentations

Tuspetinib Myeloid Kinase Inhibitor Safety and Efficacy as Monotherapy and Combined with Venetoclax in Phase 1/2 Trial of Patients with Relapsed or Refractory (R/R) Acute Myeloid Leukemia (AML)

- Abstract Summary: Tuspetinib (TUS) is a potent once daily oral myeloid kinase inhibitor of SYK, mutated and unmutated forms of FLT3, JAK1/2, RSK, mutant forms of KIT, and TAK1-TAB1 kinases that mediate dysregulated cellular proliferation in acute myeloid leukemia (AML). As a single agent, TUS was well-tolerated and highly active across four dose levels among diverse AML genotypes and delivered a 42% CR/CRh across evaluable venetoclax (VEN) naïve patients at the 80mg daily RP2D. In the ongoing APTIVATE clinical study, tuspetinib is being evaluated clinically as monotherapy (TUS) and in combination with venetoclax (TUS/VEN) in a global Phase 1/2 trial of patients with R/R AML. The TUS/VEN doublet also has been well tolerated and has achieved multiple responses to date in patients who previously failed VEN (Prior-VEN failure AML), including Prior-VEN failure patients who also previously failed FLT3 inhibitors, all of whom represent emerging populations of high unmet medical

need. Notably, TUS targets VEN resistance mechanisms and appears to re-sensitize Prior-VEN failure patients to VEN.

Tuspetinib Oral Myeloid Kinase Inhibitor Creates Synthetic Lethal Vulnerability to Venetoclax

- Abstract Summary: Tuspetinib (TUS), a once daily oral agent, simultaneously suppresses a limited set of key oncogenic signaling pathways that mediate resistance to acute myeloid leukemia (AML) drugs by potentially inhibiting SYK, mutated and unmutated forms of FLT3, JAK1/2, RSK, mutant forms of KIT, and TAK1-TAB1 kinases. TUS as a single agent produces complete remissions in relapsed/refractory (R/R) AML patients, and the tuspetinib/venetoclax (TUS/VEN) combination doublet achieves multiple responses among very difficult to treat AML subpopulations in the ongoing Phase 1/2 APTIVATE trial. We investigated the effects of TUS on key elements of the phosphokinome and apoptotic proteome in both parental and TUS-resistant AML cells. In parental cells, TUS acutely inhibits key oncogenic signaling pathways and shifts the balance of pro- and anti-apoptotic proteins in favor of apoptosis, suggesting that it may generate vulnerability to VEN. Indeed, acquired TUS resistance generated a synthetic lethal vulnerability to VEN of unusually high magnitude. Concurrent administration of TUS and VEN may eliminate cells that carry this form of TUS resistance at the start of therapy and discourage the emergence of TUS resistance during treatment.

About Aptose

Aptose Biosciences is a clinical-stage biotechnology company committed to developing precision medicines 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 oral kinase inhibitors under development for hematologic malignancies: tuspetinib (HM43239), an oral, myeloid kinase inhibitor being studied as monotherapy and in combination therapy in the APTIVATE international Phase 1/2 expansion trial in patients with relapsed or refractory acute myeloid leukemia (AML); and luxetpinib (CG-806), an oral, dual lymphoid and myeloid kinase inhibitor in Phase 1 a/b stage development for the treatment of patients with relapsed or refractory hematologic malignancies. For more information, please visit www.aptose.com.

Forward-Looking Statements

This press release may contain forward-looking statements within the meaning of Canadian and U.S. securities laws, including, but not limited to, statements relating to the Company's growth, plans, objectives, expectations and intentions and other statements including words such as "continue", "expect", "intend", "will", "hope", "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.

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 Inc.

Susan Pietropaolo

Corporate Communications &
Investor Relations

201-923-2049

spietropaolo@aptose.com

LifeSci Advisors, LLC

Dan Ferry, Managing
Director

617-430-7576

Daniel@LifeSciAdvisors.com



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