

June 2, 2022



Aptose Presents Highlights from Corporate Update and KOL Event

HM43239 Delivers New Complete Remission at 160mg Dose in AML with Wildtype FLT3

New "G3" Formulation of Luxeptinib Demonstrates Encouraging PK Results

SAN DIEGO and TORONTO, June 02, 2022 (GLOBE NEWSWIRE) -- In a release issued under the same headline earlier today by Aptose Biosciences, Inc. (NASDAQ: APTO, TSX: APS), please note that in the section of updated clinical findings with HM43239, the fifth bullet point should read "Eight total responses, including seven CRs and one PR, and favorable safety achieved at three separate dose levels (80 mg, 120 mg, 160 mg)". The corrected release follows:

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 released highlights from a key opinion leader (KOL) and corporate update event held today, June 2, 2022. The event included an up-to-date review of clinical data for Aptose's two investigational products under development for hematologic malignancies: HM43239, an oral, myeloid kinome inhibitor in an international Phase 1/2 trial in patients with relapsed or refractory acute myeloid leukemia (AML); and luxeptinib, an oral, dual lymphoid and myeloid kinome inhibitor in a Phase 1 a/b trial in patients with relapsed or refractory B-cell malignancies, and in a separate Phase 1 a/b trial in patients with relapsed or refractory AML or high risk myelodysplastic syndrome (MDS).

Guest KOLs included Brian Druker, M.D., of the Oregon Health & Science University, Naval G. Daver, M.D., of The University of Texas MD Anderson Cancer Center, and Brian Andrew Jonas, M.D., Ph.D., of the University of California, Davis, Comprehensive Cancer Center, who discussed the current treatment landscape and unmet medical need in treating patients with acute myeloid leukemia (AML), as well as their experiences with Aptose's investigational therapies.

The webcast of the presentation, including the Q&A with the guest KOLs, is available on Aptose's website [here](#).

Aptose provided updated clinical findings with HM43239, a potent suppressor of FLT3, SYK, JAK 1/2 and mutant forms of cKIT kinases operative in AML:

- Clinically validated in a highly diverse set of relapsed/refractory (R/R) AML patients
- Fast Track Designation supported by multiple complete remissions (CRs) in FLT3-mutant refractory R/R AML, including those who failed prior therapy with other FLT3 inhibitors
- New CRi at 160 mg dose in a R/R AML patient with wildtype FLT3 and other adverse

mutations

- Patient with CRi at 120 mg dose bridged to hematopoietic stem cell transplantation
- Eight total responses, including seven CRs and one PR, and favorable safety achieved at three separate dose levels (80 mg, 120 mg, 160 mg)
- One DLT of muscle weakness (not rhabdomyolysis) reported at 200 mg
- Three separate doses (80 mg, 120 mg, 160 mg) selected for Expansion Clinical Trials
- Single agent Expansion Clinical Trials in FLT3-mutated and FLT3-unmutated AML expected to begin in the second half of 2022
- Combination (HM43239 with venetoclax) Expansion Clinical Trials in FLT3-mutated and FLT3-unmutated AML expected to begin in the first half of 2023

Aptose also reviewed clinical findings with the new G3 formulation of luxetpinib (Lux):

- G3 formulation was designed to increase plasma exposure and lower pill burden
- Patients already administered G3 formulation at 50 mg, 100 mg and 200 mg
- G3 formulation is being tested in patients with R/R B-cell malignancies and R/R AML
- G3 formulation encouraging with rapid absorption and exposures maintained over 3 days
- Plan transition from G1 to G3 continuous dosing if PK modeling studies are supportive

“We’re pleased to announce a new complete remission (CRi) today with HM43239 in a relapsed AML patient with wildtype FLT3 and mutations in diverse genes (RAS, BCOR, U2AF1, SETBP1), expanding the genotypes and R/R AML patient population that may respond to this drug that has thus far been generally well tolerated,” said William G. Rice, Ph.D., Chairman, President and Chief Executive Officer. “We’ve identified three doses and target patient populations for our next stage of Expansion Clinical Trials with HM43239, as we move along a pathway toward registrational studies. For Lux, our new G3 formulation appears to be significantly better absorbed than the original formulation and we continue to believe in its potential as a unique dual lymphoid and myeloid kinome inhibitor.”

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: HM43239, an oral, myeloid kinome inhibitor in an international Phase 1/2 trial in patients with relapsed or refractory acute myeloid leukemia (AML); and luxetpinib, an oral, dual lymphoid and myeloid kinome inhibitor in a Phase 1 a/b trial in patients with relapsed or refractory B cell malignancies who have failed or are intolerant to standard therapies, and in a separate Phase 1 a/b trial in patients with relapsed or refractory AML or high risk myelodysplastic syndrome (MDS). For more information, please visit www.apptose.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 development plans and dose escalations, the clinical potential, anti-cancer activity,

therapeutic potential and applications and safety profile of HM43239 and luxetpinib; the potential expansion of the list of the treatable population for HM43239; the HM43239 Phase 1/2 AML clinical trial; the luxetpinib Phase 1 a/b B-cell malignancy and Phase 1 a/b AML clinical trials and the upcoming milestones of such trials; the development of a new formulation (G3) for luxetpinib; upcoming updates regarding the clinical trials; and statements relating to the Company's 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. 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; the potential impact of the COVID-19 pandemic and other risks detailed from time-to-time in our ongoing current reports, 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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