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Aptose Biosciences Announces Collaborations for New Multi-Targeting Epigenetic Therapeutic Agents

Moffitt Cancer Center Grants Aptose Exclusive Global Rights to Highly Potent Multi-Targeting Epigenetic Inhibitors

Exclusive Agreement with Laxai Avanti Life Sciences to Design Next Generation Epigenetic Therapeutics

REDWOOD CITY, Calif., TORONTO, TAMPA, Fla. and HYDERABAD, India, Nov. 10, 2015 (GLOBE NEWSWIRE) -- Aptose Biosciences Inc. (Nasdaq:APTO) (TSX:APS), a clinical-stage company developing new therapeutics and molecular diagnostics that target the underlying mechanisms of cancer, today announced two collaborations that will provide exclusive access to new epigenetic therapeutics for the Company's oncology pipeline. These partnerships have been strategically formed to leverage Aptose's scientific and clinical expertise in cancer and hematologic diseases to develop mechanistically differentiated and high-value epigenetic drug candidates.

Strategic Collaboration with Moffitt Cancer Center

Aptose has entered into a definitive agreement with Moffitt Cancer Center for exclusive global rights to potent, multi-targeting, single-agent inhibitors for the treatment of hematologic and solid tumor cancers. These small molecule agents are highly differentiated inhibitors of the Bromodomain and Extra-Terminal motif (BET) protein family members, which simultaneously target specific kinase enzymes. The molecules developed by Moffitt exhibit single-digit nanomolar potency against the BET family members and specific oncogenic kinases which, when inhibited, are synergistic with BET inhibition. Under the agreement, Aptose will gain access to the drug candidates developed by Moffitt and the underlying intellectual property covering the chemical modifications enabling potent bromodomain (BRD) inhibition on the chemical backbone of a kinase inhibitor. Aptose expects lead clinical candidates to emerge from the collaboration by late 2016.

Transcriptional dysregulation in cancer cells may occur through various means, including chromatin remodeling, histone modification and super-enhancer formation. The bromodomain proteins play a critical role in this dysregulation, and hence targeting specific bromodomains represents a validated treatment approach for various cancers. Aptose is committed to developing a pipeline of molecules that inhibit key epigenetic targets with the potential to intervene in oncogenesis and induce remission.

"We've built an oncology drug development organization with valuable ties to leading clinical centers and thought leaders," said William G. Rice, Ph.D., Chairman, President and CEO, "and we are exceptionally pleased to partner with Moffitt on advancing new epigenetic

inhibitors, specifically bromodomain inhibitors that simultaneously inhibit specific kinases in key regulatory pathways."

"Aptose views a multi-targeting approach, which incorporates bromodomain inhibition, as an exciting means to enhance efficacy and diminish therapeutic resistance relative to the current landscape in cancer treatment. This is even more beneficial when inhibition of the pathways is highly synergistic. The researchers at Moffitt have made unprecedented progress in this field," continued Dr. Rice.

"We view the advancement of epigenetic multi-inhibitors as a highly promising strategy in the treatment of cancer," said the principal investigators Ernst Schonbrunn, Ph.D. and Nicholas Lawrence, Ph.D., members of the Drug Discovery Program at Moffitt, "and targeting broad-acting epigenetic regulators of transcription like bromodomain proteins is needed to suppress the induction of gene expression that results when cancer cells respond to kinase inhibitors."

"We are excited to work with an organization as scientifically driven to develop novel therapeutics as Aptose," said Haskell Adler, Ph.D., MBA, Senior Licensing Manager at Moffitt.

Exclusive Agreement with Laxai Avanti Life Sciences

Aptose today also announced an exclusive drug discovery partnership with Laxai Avanti Life Sciences (LALS) for their expertise in next generation epigenetic-based therapies. Under the agreement, LALS will be responsible for developing multiple clinical candidates, including optimizing candidates derived from Aptose's relationship with the Moffitt Cancer Center. Aptose will own global rights to all newly discovered candidates characterized and optimized under the collaboration, including all generated intellectual property.

"We have identified LALS as an organization with high-caliber medicinal chemistry and with robust, and highly efficient drug discovery capabilities that complement our capabilities at Aptose," said Dr. Rice. "These collaborations are designed to build upon insights into the epigenetic field that were informed by the mechanism of APTO-253. As we continue to advance APTO-253 into late-stage clinical development, we are committed to creating and acquiring additional differentiated agents and building a staged oncology pipeline behind APTO-253."

About APTO-253

Epigenetic suppression of the KLF4 gene has been reported in the scientific literature as a key transforming event in AML and high-risk myelodysplastic syndromes. APTO-253, Aptose's lead drug candidate, is a first-in-class inducer of the Krüppel-like factor 4 (KLF4) tumor suppressor gene, and the only clinical-stage compound targeted for patients with suppressed KLF4 levels. APTO-253 has demonstrated a favorable safety profile with no evidence of bone marrow suppression. Preclinical studies have shown potent single-agent activity and an opportunity for combination therapy with a variety of anti-cancer therapeutics. The drug candidate is in a Phase 1b clinical study in patients with relapsed or refractory hematologic malignancies.

About Moffitt Cancer Center

Located in Tampa, Moffitt is one of only 45 National Cancer Institute-designated Comprehensive Cancer Centers, a distinction that recognizes Moffitt's excellence in research, its contributions to clinical trials, prevention and cancer control. Moffitt is the top-ranked cancer hospital in Florida and has been listed in U.S. News & World Report as one of the "Best Hospitals" for cancer care since 1999. With more than 4,600 team members, Moffitt has an economic impact in the state of $1.9 billion. For more information, visit MOFFITT.org, and follow the Moffitt momentum on Facebook, Twitter and YouTube.

About Laxai Avanti Life Sciences

Laxai Avanti Life Sciences (LALS) was established in 2007 with a vision to innovate and accelerate the drug discovery campaigns of global pharmaceutical companies. The goal of LALS is to provide intelligent solutions to global pharmaceutical and biotechnological companies by providing high quality services with accelerated timelines. LALS provides a one-stop service for pharmaceutical and biotechnology companies around the globe to accelerate drug discovery programs. LALS current client base includes Biopharmaceutical, Agrochemical and Specialty Chemical Companies in Europe and the US.

About Aptose Biosciences

Aptose Biosciences is a clinical-stage biotechnology company committed to discovering and 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 research, coupled with companion diagnostics to identify the optimal patient population for our products. The Company's small molecule cancer therapeutics pipeline includes products designed to provide enhanced efficacy with existing anti-cancer therapies and regimens without overlapping toxicities. Aptose Biosciences Inc. is listed on NASDAQ under the symbol APTO and on the TSX under the symbol APS.

Forward Looking Statements

This press release contains forward-looking statements within the meaning of Canadian and U.S. securities laws. Such statements include, but are not limited to, the ability of the company to develop mechanistically differentiated and high-value epigenetic drug candidates; that the licensed molecules will be potent, multi-targeting, single-agent inhibitors for the treatment of hematologic and solid tumor cancers; that the small molecule agents are highly differentiated inhibitors of the Bromodomain and Extra-Terminal motif (BET) protein family members, which simultaneously target specific kinase enzymes; that lead clinical candidates may emerge from the collaboration by late 2016; that future bromodomain inhibitors will simultaneously inhibit specific kinases in key regulatory pathways; that we will be able to enhance efficacy and diminish therapeutic resistance relative to the current landscape in cancer; that the researchers at Moffitt Cancer Center have made unprecedented progress in this field; that we will continue to advance APTO-253 into late-stage clinical development 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 expressed or implied forward looking statements 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 conditions; 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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