



Windtree Announces Publication on its SERCA2a Activator Drug Candidate for Chronic and Acute Heart Failure

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Additionally, the USPTO Has Published the Patent Application for One Group of Windtree's SERCA2a Activators

WARRINGTON, Pa., Feb. 28, 2023 (GLOBE NEWSWIRE) -- Windtree Therapeutics, Inc. ("Windtree" or the "Company") (NasdaqCM: WINT), a biotechnology company focused on advancing multiple late-stage interventions for cardiovascular disorders, announced that its preclinical stage drug candidates called SERCA2a Activators were featured in a publication in The Journal of Pharmacology and Experimental Therapeutics entitled "Istaroxime Metabolite PST3093 Selectively Stimulates SERCA2a and Reverses Disease-Induced Changes in Cardiac Function."

Heart failure is a complex and heterogeneous condition and involves impaired ability of the heart to contract (systolic) and/or relax (diastolic function). The publication emphasizes the interest in SERCA2a as a target in treating heart failure because it is instrumental in calcium management, critically important in heart muscle contraction and relaxation. Abnormalities in the handling of calcium can facilitate arrhythmias and may contribute to poor myocardial remodeling as the disease progresses. Our SERCA2a activators uniquely interfere with phospholamban, a protein that inhibits SERCA2a function and does so excessively in heart failure. The preclinical data discussed in the paper provides rationale for selective targeting of SERCA2A in the treatment of heart failure.

"Windtree's SERCA2a activator drug candidates could represent a promising IV or oral approach to treat heart failure," said Steve Simonson, CMO of Windtree Therapeutics. "SERCA2a activation has been an attractive but elusive approach for the treatment of heart failure for many years. It has been difficult to achieve, however, our approach to relieve the inhibition of SERCA2a by phospholamban has provided a potentially successful mechanism to achieve this goal. Human clinical data emerging from the istaroxime program is substantiating this approach and providing unique insight into the potential benefits of this mechanism in humans. Istaroxime has completed three positive phase 2 clinical studies in acute decompensated heart failure and early cardiogenic shock. This experience may provide a better probability for clinical success in the development of SERCA2a activators as they advance."

Additionally, the USPTO published the Company's SERCA2a Activator patent application entitled "Androstane Derivatives with Activity as Pure or Predominantly Pure Stimulators of SERCA2a for the Treatment of Heart Failure." The Publication No is US-2023-0009312-A1.

About Pure SERCA2a Activators

Sarco endoplasmic reticulum Ca²⁺-ATPase 2a, or SERCA2a, activators increase SERCA2a activity. The Windtree research program is evaluating these preclinical product candidates as oral and intravenous SERCA2a activator heart failure compounds. As potential oral agents, these candidates could be used for chronic treatment of heart failure.

About Istaroxime

Istaroxime is a first-in-class dual mechanism therapy designed to improve both systolic and diastolic cardiac function. Istaroxime is a positive inotropic agent that increases myocardial contractility through inhibition of Na⁺/K⁺-ATPase with a complimentary mechanism that facilitates myocardial relaxation through activation of the SERCA2a calcium pump on the sarcoplasmic reticulum enhancing calcium reuptake from the cytoplasm. Data from multiple Phase 2 studies in patients with acute heart failure (AHF) demonstrate that istaroxime infused intravenously significantly improves cardiac function and blood pressure without causing heart rate increases or rhythm disturbances.

About Windtree Therapeutics, Inc.

Windtree Therapeutics, Inc. is advancing multiple late-stage interventions for cardiovascular disorders to treat patients in moments of crisis. Using new scientific and clinical approaches, Windtree is developing a multi-asset franchise anchored around compounds with an ability to activate SERCA2a, with lead candidate, istaroxime, being developed as a first-in-class treatment for acute heart failure and for early cardiogenic shock. Windtree's heart failure platform includes follow-on oral pre-clinical SERCA2a activator assets as well. In pulmonary care, Windtree has focused on facilitating the transfer of the KL4 surfactant platform, to its licensee, Lee's Pharmaceutical (HK) Ltd. Included in Windtree's portfolio is rosfuroxin, a novel precision drug product targeting hypertensive patients with certain genetic profiles.

Forward Looking Statements

This press release contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. The Company may, in some cases, use terms such as "predicts," "believes," "potential," "proposed," "continue," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should" or other words that convey uncertainty of future events or outcomes to identify these forward-looking statements. Such statements are based on information available to the Company as of the date of this press release and are subject to numerous important factors, risks and uncertainties that may cause actual events or results to differ materially from the Company's current expectations. Examples of such risks and uncertainties include: risks and uncertainties associated with the economic and social consequences of the COVID-19 pandemic, including any adverse impact on the Company's clinical trials, clinical trial timelines or disruption in supply chain; the success and advancement of the clinical development programs for istaroxime and the Company's other product candidates; the impacts of political unrest, including as a result of geopolitical tension, including the conflict between Russia and Ukraine, the People's Republic of China and the Republic of China (Taiwan), and any sanctions, export controls or other restrictive actions that may be imposed by the United States and/or other countries which could have an adverse impact on the Company's operations, including through disruption in supply chain or access to potential international clinical trial sites, and through disruption, instability and volatility in the global markets, which could have an adverse impact on the Company's ability to access the capital markets; the Company's ability to secure significant additional capital as and when needed; the Company's ability to access the debt or equity markets; the Company's ability to manage costs and execute on its operational and budget plans; the results, cost and timing of the Company's clinical development programs, including any delays to such clinical trials relating to enrollment or site initiation; risks related to technology

transfers to contract manufacturers and manufacturing development activities; delays encountered by the Company, contract manufacturers or suppliers in manufacturing drug products, drug substances, and other materials on a timely basis and in sufficient amounts; risks relating to rigorous regulatory requirements, including that: (i) the U.S. Food and Drug Administration or other regulatory authorities may not agree with the Company on matters raised during regulatory reviews, may require significant additional activities, or may not accept or may withhold or delay consideration of applications, or may not approve or may limit approval of the Company's product candidates, and (ii) changes in the national or international political and regulatory environment may make it more difficult to gain regulatory approvals and risks related to the Company's efforts to maintain and protect the patents and licenses related to its product candidates; risks that the Company may never realize the value of its intangible assets and have to incur future impairment charges; risks related to the size and growth potential of the markets for the Company's product candidates, and the Company's ability to service those markets; the Company's ability to develop sales and marketing capabilities, whether alone or with potential future collaborators; and the rate and degree of market acceptance of the Company's product candidates, if approved. These and other risks are described in the Company's periodic reports, including its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, filed with or furnished to the Securities and Exchange Commission and available at www.sec.gov. Any forward-looking statements that the Company makes in this press release speak only as of the date of this press release. The Company assumes no obligation to update forward-looking statements whether as a result of new information, future events or otherwise, after the date of this press release.

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