NeuroSense Investor Relations

NeuroSense Therapeutics & Massachusetts General Hospital's NeuroEpigenetics Lab to Collaborate on Elucidating Neurotherapeutic Effects of PrimeC in ALS

- ***In vitro studies to test the effects of PrimeC on key pathways involved in ALS including TDP-43 accumulation, autophagy defects, mitochondrial dysfunction, and oxidative stress***
- ***Preliminary results from this collaboration will be presented by Dr. Zimri at the upcoming AD/PD 2023 Advances in Science & Therapy Conference***
- ***PrimeC is currently being evaluated in PARADIGM, a Phase 2b ALS trial***

CAMBRIDGE, Mass., March 27, 2023 /PRNewswire/ -- NeuroSense Therapeutics Ltd. (Nasdaq: NRSN) ("NeuroSense"), a company developing treatments for severe neurodegenerative diseases, today announced it has signed a collaboration agreement with Dr. Ghazaleh Sadri-Vakili, MS, PhD and Massachusetts General Hospital's NeuroEpigenetics Lab to explore the neurotherapeutic effects of its lead combination drug, PrimeC, utilizing a novel *in vitro* model generated from post-mortem ALS brain tissue (synaptoneurosomes (SNs) system).

Dr. Sadri-Vakili, Associate Professor at Harvard Medical School and the Director of the NeuroEpigenetics laboratory at the MassGeneral Institute for Neurodegenerative Disease, focuses on understanding the mechanisms involved in neurological disorders. Dr. Sadri-Vakili's laboratory has identified disease specific alterations in multiple cellular pathways using human samples as well as cellular and animal models of amyotrophic lateral sclerosis (ALS), Huntington's disease (HD), and X-linked dystonia-parkinsonism (XDP). In ALS, the laboratory is assessing the pathogenic role of neuroinflammation and oxidative stress using post-mortem samples. Key elements of these studies have recently been published using a novel ALS SNs system.

The objective of the collaborative studies is to expand the understanding of PrimeC's mechanism of action in attenuating ALS-related pathology, specifically TDP-43 accumulation, autophagy defects, mitochondrial dysfunction, and oxidative stress. To address this, ALS- or control-SNs derived from post-mortem brains will be used to treat SH-SY5Y cells to induce reactive oxygen species and mitochondrial dysfunction, as previously shown by the Sadri-Vakili lab, in the presence or absence of PrimeC. Importantly, the studies will compare the potential therapeutic effect of PrimeC combination therapy relative to each one of its FDA-approved compounds, ciprofloxacin and celecoxib, separately, to further demonstrate the beneficial synergistic effect of PrimeC as a combination therapy.

"We are excited to join NeuroSense in its mission to advance PrimeC for people living with ALS," commented Dr. Sadri-Vakili. "Our laboratory prides itself on partnering with industry collaborators to assess the neuroprotective efficacy of new treatments with the hopes of identifying novel therapies for ALS. Our *in vitro* model may serve as an effective tool to increase our understanding of PrimeC's neurotherapeutic mechanism of action."

NeuroSense's Vice President of R&D, Dr. Shiran Zimri stated, "Having worked closely with Massachusetts General Hospital on our biomarker studies, we are pleased to formally establish this important collaboration with Dr. Sadri-Vakili's team, where we hope to elucidate PrimeC's efficacy via key measurements that correlate with our Phase 2b ALS study endpoints."

Preliminary results from this collaboration will be presented by Dr. Zimri in her talk at the upcoming AD/PD 2023 Advances in Science & Therapy Conference on March 28 - April 1, 2023 in Gothenburg, Sweden.

About PrimeC

PrimeC, NeuroSense's lead drug candidate, is a novel extended-release oral formulation composed of a unique fixed-dose combination of two FDA-approved drugs: ciprofloxacin and celecoxib. PrimeC is designed to synergistically target several key mechanisms of amyotrophic lateral sclerosis (ALS) that contribute to motor neuron degeneration, inflammation, iron accumulation and impaired RNA regulation to potentially inhibit the progression of ALS. NeuroSense completed a Phase 2a clinical study which successfully met its safety and efficacy endpoints including reducing functional and respiratory deterioration and statistically significant changes in ALS-related biological markers indicating PrimeC's biological activity. Through a collaboration with Massachusetts General Hospital in Boston on novel Neuron-Derived Exosomes (NDEs), NeuroSense is working to further determine the biological changes in ALS-related pathologies and the effect of PrimeC on relevant targets. PrimeC was granted Orphan Drug Designation by the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA).

About PARADIGM

PARADIGM is a Phase 2b randomized, multi-center, multinational, prospective, double-blind, placebo-controlled study, with an open-label extension, to evaluate the safety, tolerability, and efficacy of PrimeC in the treatment of ALS. To date, over 50% of the planned 69 study participants have been enrolled and topline data are expected H2 2023.

About NeuroSense

NeuroSense Therapeutics, Ltd. is a clinical-stage biotechnology company focused on discovering and developing treatments for patients suffering from debilitating neurodegenerative diseases. NeuroSense believes that these diseases, which include amyotrophic lateral sclerosis (ALS), Alzheimer's disease and Parkinson's disease, among others, represent one of the most significant unmet medical needs of our time, with limited effective therapeutic options available for patients to date. Due to the complexity of neurodegenerative diseases and based on strong scientific research on a large panel of related biomarkers, NeuroSense's strategy is to develop combined therapies targeting multiple pathways associated with these diseases.

For additional information, we invite you to visit our website and follow us on LinkedIn and Twitter.

Forward-Looking Statements

This press release contains "forward-looking statements" that are subject to substantial risks and uncertainties. All statements, other than statements of historical fact, contained in this press release are forward-looking statements. Forward-looking statements contained in this press release may be identified by the use of words such as "anticipate," "believe," "contemplate," "could," "estimate," "expect," "intend," "seek," "may," "might," "plan," "potential," "predict," "project," "target," "aim," "should," "will" "would," or the negative of these words or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements are based on NeuroSense Therapeutics' current expectations and are subject to inherent uncertainties, risks and assumptions that are difficult to predict and include statements regarding the goal of the collaboration with Massachusetts General Hospital; the company's PrimeC development program; the potential for PrimeC to safely and effectively target ALS; preclinical and clinical data for PrimeC; the timing of current and future clinical trials; the nature, strategy and focus of the company and further updates with respect thereto; and the development and commercial potential of any product candidates of the company. Such risks and uncertainties include the risk that the collaboration will not elucidate PrimeC's efficacy via key measurements that correlate with our Phase 2b ALS study endpoints or the preliminary results from the collaboration will be delayed and other risks and uncertainties set forth in the Company's filings with the Securities and Exchange Commission (SEC), including the Company's Annual Report on Form 20-F filed with the SEC on April 14, 2022. Further, certain forward-looking statements are based on assumptions as to future events that may not prove to be accurate. Further, certain forward-looking statements are based on assumptions as to future events that may not prove to be accurate. Forward-looking statements contained in this announcement are made as of this date, and NeuroSense Therapeutics Ltd. undertakes no duty to update such information except as required under applicable law.

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