

A Milestone Phase I Randomized, Double-Blind Clinical Trial Demonstrates High-Dose Niagen®, Patented Nicotinamide Riboside (NR), Supplementation Induces a Potent NAD⁺ Response and Is Associated With Mild Improvement in Parkinson's Disease (PD)

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Building on a growing body of research showcasing NR as a potential therapeutic strategy for PD, this is the first clinical study to showcase the safety, tolerability, and beneficial metabolic effects of high-dose NR at 3,000 mg per day

LOS ANGELES--(BUSINESS WIRE)-- **ChromaDex Corp.** (NASDAQ:CDXC), a global authority on Nicotinamide Adenine Dinucleotide (NAD⁺) and healthy aging research, shares results from a new breakthrough study analyzing the safety of high-dose nicotinamide riboside (NR) supplementation on individuals with Parkinson's disease (PD). This study was part of the **ChromaDex External Research Program** (CERP™), which donated ChromaDex's patented NR ingredient, Niagen®, the most efficient and high quality NAD⁺ precursor, for the advancement of this research.

In a pioneering development for PD treatment, this landmark phase I randomized, double-blind clinical study reported in the peer-reviewed journal **Nature Communications** by a team of scientists led by Prof. Charalampos Tzoulis, Haukeland University Hospital and University of Bergen in Norway, demonstrated that supplementing individuals with PD with high-dose (3,000 mg daily) Niagen NR was short-term safe, greatly increased whole blood NAD⁺ levels, augmented the NAD⁺ metabolome, and was associated with a significant clinical improvement. These results build upon previous research led by Dr. Tzoulis (**Cell Metabolism**) and showcase that supplementation with Niagen NR may be a therapeutic strategy for PD, pending further research.

With several studies demonstrating the safety and tolerability of 2,000mg of Niagen NR, this marks a milestone as the first-ever clinical study to demonstrate the safety, tolerability, and beneficial effects of high-dose Niagen NR at 3,000 mg per day.

“As the world's leading company in NAD+ research and commercialization, ChromaDex is proud to announce this groundbreaking NR-SAFE study from Dr. Tzoulis and his team of researchers that reveals the potential of Niagen NR as a therapy for Parkinson's disease. PD affects more than 10 million people worldwide,” noted Rob Fried, CEO of ChromaDex. “This research not only demonstrates the safety and tolerability of high-dose Niagen NR but also highlights its ability to significantly increase NAD+ levels and potentially improve the clinical severity of PD.”

PD is a common neurodegenerative disorder largely characterized by progressive impairments in motor function, including tremors, stiffness, slow movement, and poor balance, as well as in non-motor functions, such as abnormal sleep patterns, gastrointestinal dysfunction, and cognitive impairment, or dementia. Current treatment options are limited, and there is a pressing need for innovative approaches to manage the effects of this debilitating neurodegenerative disorder.

“Results of this study build on previous research conducted by our lab, demonstrating that oral NR therapy increases NAD+ levels in the brain of individuals with PD and this is associated with ameliorated brain metabolism and mild clinical improvement,” commented Prof. Charalampos Tzoulis, Professor of Neurology and Neurogenetics, Director of the K.G Jebsen Center for Translational Research in Parkinson's disease, and Co-Director of the Neuro-SysMed Research Center, University of Bergen and Haukeland University Hospital, Bergen, Norway. “Abnormal energy metabolism due to dysfunction in the mitochondria has been linked to PD and is believed to play a role in the initiation and progression of the disease. Our previous findings have nominated NR as a potential disease-modifying therapy for PD, which will not only target and rectify disease-specific processes, but may also optimize neuronal metabolism and fortify neurons, rendering them more resilient against age-related stress and neurodegeneration. However, to harness the full therapeutic potential of NR, we need to explore higher dose regimens. This study establishes the short-term safety of 3,000 mg NR daily and allows the clinical community to explore high-dose options in future therapeutic trials. As for conclusive proof on the therapeutic potential of NR in PD, we look forward to the results from our year-long NO-PARK phase II/III study on 400 persons with PD, which is already ongoing at our Center, and estimated to conclude by the end of 2024.” Public information on the NO-PARK study can be viewed at neuro-sysmed.no and at www.clinicaltrials.gov. Notably, all of Prof. Tzoulis' clinical research is academically-driven and based largely on public funding.

About the study

Dr. Tzoulis and his team of researchers sought to assess short-term tolerability and impact on NAD+ as well as

clinical severity of PD. Exploratory outcomes included changes in serum homocysteine levels, fasting blood glucose, and serum insulin levels.

The study was a randomized, double-blind, placebo-controlled, phase I clinical trial in 20 individuals with idiopathic PD fulfilling the criteria set by the Movement Disorders Society (MDS). Individuals with PD were given 3,000 mg of NR per day or placebo for four consecutive weeks. They were assessed based on clinical and molecular measures, an electrocardiogram, and through the MDS-UPDRS rating scale, a tool used by medical professionals and researchers to assess and measure the severity of PD symptoms.

Study highlights

- High-dose NR was safe and well-tolerated with no related adverse events.
- NR significantly increased NAD⁺ levels and modified the NAD⁺ metabolome in whole blood.
- High-dose NR did not alter whole blood homocysteine, or other major methyl donor groups, suggesting no impact on methyl donor group pool.
- NR was associated with a significant improvement of clinical symptoms of PD, measured by MDS-UPDRS, suggesting augmenting NAD⁺ levels may have a symptomatic anti-Parkinson's effect.

Relevance

This promising milestone research demonstrates that high-dose NR at 3,000 mg per day is safe, well-tolerated, and may improve clinical symptoms for PD. These results set the stage for the long-term NO-PARK Phase II/III clinical study, which will determine if NR can delay disease progression in persons with PD. Further, Prof. Tzoulis and his team of investigators are conducting the N-DOSE clinical trial to determine the optimal safe dose to assess the efficacy of NR as part of the treatment of PD (clinicaltrials.gov).

For additional information on the science supporting Niagen® visit www.chromadex.com.

About ChromaDex:

ChromaDex Corp. is a global bioscience company dedicated to healthy aging. The ChromaDex team, which includes world-renowned scientists, is pioneering research on nicotinamide adenine dinucleotide (NAD⁺), levels of which decline with age. ChromaDex is the innovator behind NAD⁺ precursor nicotinamide riboside (NR), commercialized as the flagship ingredient Niagen®. Nicotinamide riboside and other NAD⁺ precursors are protected by ChromaDex's patent portfolio. ChromaDex maintains a website at www.chromadex.com to which ChromaDex regularly posts copies of its press releases as well as additional and financial information about the Company.

Forward-Looking Statements:

This release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities and Exchange Act of 1934, as amended, including statements related to whether the study revealed groundbreaking insights into the potential of Niagen NR ingredient as a therapy for Parkinson's disease and whether this research not only demonstrates the safety and tolerability of high-dose Niagen NR but also highlights its ability to significantly increase NAD+ levels and improve the clinical severity of PD. Statements that are not a description of historical facts constitute forward-looking statements and may often, but not always, be identified by the use of such words as "expects," "anticipates," "intends," "estimates," "plans," "potential," "possible," "probable," "believes," "seeks," "may," "will," "should," "could" or the negative of such terms or other similar expressions. Risks that contribute to the uncertain nature of these forward-looking statements include the impact of the COVID-19 pandemic on our business and the global economy; our history of operating losses and need to obtain additional financing; the growth and profitability of our product sales; our ability to maintain sales, marketing and distribution capabilities; changing consumer perceptions of our products; our reliance on a single or limited number of third-party suppliers; and the risks and uncertainties associated with our business and financial condition. More detailed information about ChromaDex and the risk factors that may affect the realization of forward-looking statements is set forth in ChromaDex's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, ChromaDex's Quarterly Reports on Form 10-Q and other filings submitted by ChromaDex to the SEC, copies of which may be obtained from the SEC's website at www.sec.gov. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof, and actual results may differ materially from those suggested by these forward-looking statements. All forward-looking statements are qualified in their entirety by this cautionary statement and ChromaDex undertakes no obligation to revise or update this release to reflect events or circumstances after the date hereof.

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