

New Study from NIH Finds Nicotinamide Riboside Helps Improve Telomere Dysfunction in Human Cells, Mice

New preclinical study finds boosting NAD⁺ with nicotinamide riboside alleviated telomere damage, providing protective effect to DNA strands

LOS ANGELES, Oct. 19, 2020 (BUSINESS WIRE)-- ChromaDex Corp. (NASDAQ:CDXC) today highlighted a new study published in [The European Molecular Biology Organization Journal](#) looking at the effect of nicotinamide riboside (NR) on maintaining telomeres, the protective regions at the end of DNA strands. This study is the first to show that by increasing NAD⁺, NR helped protect telomeres which are important in addressing life-threatening telomere-related diseases, paving the way for future clinical research. The study was conducted by investigators at the National Institute on Aging (NIA) and the National Cancer Institute (NCI), parts of the National Institutes of Health (NIH). The role of ChromaDex in this study was to provide NR through the ChromaDex External Research Program (CERP). All other aspects of the study, including analysis of the results and writing of the manuscript were conducted independently by the authors.

“Telomere attrition is recognized as one of the nine hallmarks of aging and it is well accepted that telomeres play a significant role in aging and many age-related health declines,” said Frank Jaksch, Co-Founder & Executive Chairman of ChromaDex. “These preliminary results suggest that NR can impact telomere function.”

Telomeres are “caps” at the end of chromosomes that protect DNA from getting worn away as cells replicate. Telomeres degrade and shorten with age and can become excessively damaged in certain genetic diseases, as well as from lifestyle factors such as smoking, poor diet, and chronic stress. Shortening of telomeres is associated with the symptoms of aging, heart disease, DNA damage and uncontrolled cell replication, which can lead to cancer.

[Dyskeratosis congenita \(DC\)](#) is a disease of pre-mature aging, which occurs due to a deficiency of telomere maintenance proteins. Without normal telomere function, DC presents with early-onset, life-threatening symptoms of aging in the skin, bone marrow, lungs, heart and brain.

In this recently published study, scientists examined connective tissue cells from DC patients and found that, not only were their telomeres significantly damaged, but they were also depleted in NAD⁺. Likewise, these scientists produced “telomere-depleted” mice by inactivating a gene for telomerase, the enzyme that extends telomeres. These mice also had low NAD⁺ levels.

The scientists then supplemented the cells and mice with NR. NR works by raising levels of NAD⁺, an important regulator that is known to naturally decline with age. In this study NR increased NAD⁺ levels, reduced signs of telomere damage, promoted cell growth and prevented senescence (cellular aging) in the DC cells.

These promising findings suggest that NAD⁺ repletion plays a role in maintaining healthy telomere function; however, additional research is needed.

While congenital telomere disorders like DC are rare, telomere dysfunction is implicated in signs and symptoms of normal human aging. Whether NR could play a role in supporting various aging organs is currently under investigation in dozens of [human trials](#).

ChromaDex, the exclusive licensee of Dr. Charles Brenner's patented NR, has invested over \$35 million in investigating, manufacturing and offering NR in the form of Niagen and has secured more than 20 patents. ChromaDex has demonstrated the safety and efficacy of Niagen in 11 published human trials (and over 20 additional ongoing studies further evaluating its safety and efficacy) and has achieved government regulatory acceptance in the United States, Canada, the European Union, and Australia.

For additional information about ChromaDex, please visit www.chromadex.com.

About ChromaDex:

ChromaDex Corp. is a science-based integrated nutraceutical company devoted to improving the way people age. ChromaDex scientists partner with leading universities and research institutions worldwide to discover, develop and create solutions to deliver the full potential of NAD and its impact on human health. Its flagship ingredient, NIAGEN[®] nicotinamide riboside, sold directly to consumers as TRU NIAGEN[®], is backed with clinical and scientific research, as well as extensive IP protection. TRU NIAGEN[®] is helping the world AGE BETTER[®]. 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 NR helps improve telomere dysfunction and whether NAD⁺ repletion will play a role in maintaining healthy telomere function in humans. 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. 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, 2019 as amended, 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.

ChromaDex Media Contact:

Alex Worsham, Senior Director of Global Corporate Communications

310-388-6706 ext. 689

alexw@chromadex.com

ChromaDex Investor Relations Contact:

Brianna Gerber, Vice President of FP&A and Investor Relations

949-419-0288 ext. 127

briannag@chromadex.com

Renmark Financial Communications Inc.

Daniel Gordon: dgordon@renmarkfinancial.com

Tel.: (416) 644-2020 or (212) 812-7680

www.renmarkfinancial.com