



A UNIQUE INHIBITOR OF PROLINE DEHYDROGENASE WITH MITOHORMESIS PROPERTIES FOR TREATMENT OF NEURODEGENERATIVE DISORDERS

TECHNOLOGY DESCRIPTION

Neurodegenerative diseases currently have no effective therapeutics capable of preventing or mitigating their underlying hallmark proteotoxic cellular pathogenesis. Since new therapeutic strategies are desperately needed, it has been suggested that enhancing brain or central nervous system mitohormesis, i.e., stressing mitochondria to induce a positive adaptive response, might be a promising approach. However, no target-specific or suitable in vivo mitohormesis-activating drug has yet been identified.

Buck investigators discovered that the mitochondrial enzyme proline dehydrogenase (PRODH) can be targeted with a small molecule suicide inhibitor, N-propargylglycine (N-PPG), that uniquely and irreversibly distorts the enzyme's structure to activate the mitochondrial unfolded protein response and induce brain-enhancing mitohormesis in all PRODH expressing mammalian cell systems studied to date.

APPLICATIONS

- Methods of using N-PPG to treat neurodegenerative disorders, such as Alzheimer's Disease, Huntington's Disease, Parkinson's Disease, ALS, age-related dementia, and other such diseases.
- Methods of using N-PPG for the prophylaxis of neurodegenerative disorders.

PATENT STATUS

PCT application pending

LEAD INVESTIGATOR

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