



NETRIN LOOP PEPTIDE MIMETICS FOR TREATMENT OF NEURODEGENERATION

TECHNOLOGY DESCRIPTION

Alzheimer's disease (AD), the most common form of dementia, is a progressive neurodegenerative disorder characterized by extracellular deposits of A peptide in senile plaques, intraneuronal neurofibrillary tangles, synapse loss, and cognitive decline. It is widely believed that the accumulation of A β , a small peptide with a high propensity to form oligomers and aggregates, is central to the pathogenesis of AD. A β derives from the proteolytic cleavage of the transmembrane protein, APP. The cloning and characterization of APP revealed that it possesses many features reminiscent of a membrane-anchored receptor. However, to date, no clear candidate has emerged as the major ligand triggering APP-mediated signal transduction at least in part because the signal transduction mediated by APP has remained incompletely understood.

Buck investigators have identified peptides based on the loop structures of the protein netrin-1. These "loop interaction peptides" have the ability to effect APP signaling and are able to switch APP processing from aberrant to normal. Accordingly, these peptides present a new opportunity for treatment and prophylaxis of various pathologies associated with A β formation and/or with APP processing.

APPLICATIONS

- Therapeutics for treatment of diseases of neurodegeneration including Alzheimer's disease, age-related macular degeneration, Cerebrovascular dementia, Parkinson's disease, Huntington's disease, and Cerebral amyloid angiopathy.
- Methods of preventing or delaying the diseases named above.

PATENT STATUS

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LEAD INVESTIGATOR

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