Novel Peptides for the Treatment of Amyloidoses

“These novel peptides provide a new approach to degrading and disrupting harmful plaques associated with the progression of amyloid diseases such as cerebral amyloid angiopathy (CAA) and Alzheimer’s.”

-William Van Nostrand, Ph.D., Professor, Department of Medicine, Stony Brook University

Background:
The Alzheimer’s Association estimates that greater than 5 million Americans suffer from Alzheimer’s disease, the most widespread form of dementia. The United States spends $100 billion annually in treatment of Alzheimer’s patients, and this figure is expected to triple within 25 years. Amyloid beta-proteins assemble into fibrils that form harmful plaques, implicated in the neurological deficiencies associated with Alzheimer’s disease. Additionally, other progressive neurodegenerative disorders and amyloid diseases affect both humans and animals. Thus, the aim of current and future research is to offer treatments that reduce the effects of these diseases and extend the average life expectancy of patients.

Technology Description:
Dr. William Van Nostrand, professor in the Department of Medicine at Stony Brook University, has developed a new technology that facilitates the breakdown of harmful amyloid fibrils and may prevent the formation of the amyloid plaques associated with the progression of amyloid-based neurodegenerative diseases. The invention utilizes fragments of myelin basic protein (MBP) that binds to amyloid proteins and inhibits fibril formation. Additionally, the structure of amyloid beta has been shown to be altered, allowing for the breakdown of insoluble amyloid beta fibrils. This invention proves promising for the treatment of Alzheimer’s disease, among other diseases.

Advantages
- Novel therapeutic treatment for Alzheimer’s patients, among other amyloid-based neurodegenerative disorders and prion diseases
- Prevents formation of amyloid plaques by targeted inhibition of protein-protein interactions
- Can be modified as a linker domain for the therapeutic targeting of amyloid fibers

Applications
- Neurological disorders, Alzheimer’s disease
- Amyloid diseases
- Prion diseases

Patents/Publications:
- Patent Pending

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