Novel Peptides for the Treatment of Amyloid Based Disease

Promising treatment for Alzheimer's disease

Background
Over 5 million Americans suffer from Alzheimer's disease, the most widespread form of dementia. The US 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
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.

Patent number/Publication:
- US 8815794 (compounds, issued); 14/265,958 (method)

Advantages
- Blocks naturally occurring protein-protein interactions
- Adapted to use the patented binding sequence as a linker domain for the therapeutic targeting of amyloid fibers.

Applications
- Neurological Disorders
- Alzheimer’s disease, Amyloid Diseases, Prion Diseases

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