Researchers at the University of South Florida have identified a novel molecule that effectively inhibits and removes Aβ protein aggregates seen in Alzheimer’s disease (AD) through a new method of protein synthesis.

Identifying novel inhibitors of Aβ protein aggregates for the treatment of AD has been a major focus of AD research. A collection of many molecules allows the identification of molecules (or ligands) that specifically recognize proteins of interest. These ligands are invaluable tools because they can then be used as biomarkers in imaging or used as potential drug candidates. However, the progress in development of unnatural ligand libraries is slow due in part to the lack of an effective approach to achieve a vast collection ligands and the limited availability of starting compounds.

USF researchers have developed method of protein synthesis that allows many ligands to be synthesized easily and efficiently. Using this approach, a small molecule has been identified that targets the Aβ aggregation seen in AD. This small molecule specifically disassembles Aβ40 aggregation and also removes the toxicity of Aβ42 aggregates in neuroblastoma cells. Due to the lack of current drug treatments that target the pathology of AD, this novel approach and compound has great potential for the early diagnosis, prevention and treatment of AD.

ADVANTAGES:

- Novel approach shortens the time of protein synthesis
- Molecule prevents protein aggregation
- Preferentially targets Aβ protein in Alzheimer’s disease

Drug Candidate for Alzheimer’s Disease

The Novel Molecule HW-155-1 Effectively Inhibits Aβ40 Protein Aggregation at Different Dosages

Tech ID # 13A078 Patent # 9,645,155