Researchers at the University of South Florida have developed compounds for the treatment of various neurodegenerative diseases associated with the accumulation of abnormal protein tau.

The intracellular aggregation of abnormal species of phosphorylated tau (protein tau) is a major pathologic feature of a family of neurodegenerative diseases collectively referred to as tauopathies. Tau normally functions to stabilize microtubules in neurons; however, it pathologically aggregates in more than 15 neurodegenerative diseases, including Alzheimer's disease (AD), Parkinson's disease, Pick's disease, corticobasal degeneration, and progressive supranuclear palsy. At present, researchers tend to focus primarily on agents that prevent the abnormal phosphorylation or aggregation of tau proteins. However, it has been discovered that these neurofibrillary tangles appear to be less toxic than soluble intermediates of protein tau. Therefore, agents that degrade or destabilize tau intermediates, clear aberrant tau species from cells, or otherwise reduce intracellular tau levels may be more promising therapeutics for AD and other tauopathies.

Researchers at USF have developed multiple chemical compounds termed palmadorin M and beauvericin for the treatment of neurodegenerative diseases associated with the abnormal accumulation of protein tau. These drugs were isolated from marine sources and have been shown to reduce intracellular tau phosphorylation levels in human cells. This may be an effective treatment option for many different tauopathies including Alzheimer's disease, Parkinson's disease, progressive supranuclear palsy and Pick's disease.

**ADVANTAGES:**
- Potent reduction of abnormal protein tau
- Effectively treats human cells
- May treat many different tauopathies
- Developed from natural sources

A Method of Reducing Intracellular Tau Phosphorylation Levels

Western Blots of Treated Samples Showed a Potent Reduction in Mutant P301L Tau

Tech ID # 13A073

Patent #: 9,114,130