Researchers at the University of South Florida have discovered a novel treatment that reduces phosphorylated tau in cellular models.

Tauopathies are characterized by the aggregation of abnormally phosphorylated tau in the human brain. It is a major pathological feature of various diseases such as the Alzheimer’s disease, Pick’s disease, progressive supra-nuclear palsy, frontotemporal dementia and even parkinsonism. At present, very few pharmacological solutions are available for treating tauopathies. Thus, new therapies are needed that can decrease levels of phosphorylated tau, and thereby, effectively treat tau-based disorders.

Scientists at USF discovered that hexachlorophene significantly reduced both total and phosphorylated forms of endogenous tau in M17 neuroblastoma cells, inducible tau in HEK280 cells, and over-expressed tau in Hela C3 cells. Moreover, levels of pathological forms of tau, such as phosphoserine 396, were also appreciably decreased.

Hexachlorophene substantially decreased inducible tau levels at concentrations of 1µM - a result that was confirmed by Thioflavin-S staining. By down regulated phosphorylated tau it may be possible to treat a number of devastating neurodegenerative conditions. This invention demonstrates the potential of hexachlorophene as an effective treatment of Alzheimer’s disease and other tau proteinopathies.

**ADVANTAGES:**
- Hexachlorophene significantly reduces endogenous, inducible, over-expressed and pathological tau
- Effective in reducing tau in neuronal and non-neuronal cells

*Fig: Illustrates the reduction of endogenous tau levels in M17 neuroblastoma cells at increasing hexachlorophene concentrations*