National Institute of Technology Rourkela

Progress Seminar

Seminar Title	: Effect of enteric Tau in the development and maintenance of sensory and non-sensory organs of Drosophila melanogaster
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Venue	: Ls Seminar Room
Date and Time	: 28 Mar 2025 (11AM)
Abstract	: Tau (Tubulin Associated Unit) is a widely recognized microtubule-associated protein that is primarily situated in the cytoplasm of neurons and plays an important role in Alzheimer's diseases (AD). It is expressed in axons essential for the maintenance and formation of microtubules. Under pathological conditions, it is hyperphosphorylated, detached from microtubules, and plays a major part in the neurodegenerative process by impairing neuronal function, causing inflammation, and causing necrosis/cell death. Aggregated form lead to the formation of neurofibrillary tangles (NFTs) in the brains of Alzheimer's patients it is reported that patients with AD have Tau aggregates in both their brain and gut. However, the function of Tau in the brain has been continuously researched, whereas its involvement in the gut needs more attention. In our study, we have examined the effects of different forms of Tau: Tau monomer, oligomer, and aggregates at 10 μM concentrations by feeding them to third-instar *Drosophila* larvae. To evaluate cytotoxicity and genotoxicity, we used DCFH-DA staining and DAPI staining, respectively. Following DAPI staining we found that the nucleus in the Tau treated guts are elongated, are of abnormal shape and fragmented. Our work focuses on the probable mechanism behind the nuclear elongation.