

## TAU PROTEIN, A PREDICTOR OF NEURODEGENERATIVE DISEASES

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**Introduction:** Tau proteins are part of a family of neuronal microtubule-associated proteins with a role in microtubule assembly and stability, and are also implicated in cytoskeletal maintenance and axonal transport. Mutation of the gene that encodes it, located on chromosome 17, is associated with the deposition of abnormal isoforms of this protein in neurons and glial cells in the brain and is related to neurodegenerative disorders (NDDs). Understanding these mechanisms means advancing with regard to the best way to approach neurodegenerative diseases that are still an enigma in medicine. **Goal:** To identify neurodegenerative disorders associated with abnormal deposition of microtubule-associated TAU protein and thus better understand these mechanisms. **Methodology:** Literature review by searching the MEDLINE database, via PubMed, using the terms: “Tau protein” [and] “neurodegenerative disorders”. The search filters used were: free full texts, associated terms, in the last 5 years. 32 results were found and 08 were included for this study. Articles matching the proposed theme according to the filters and search

terms were eligible for the study. 24 articles were excluded for not meeting the eligible criteria. Data extraction, analysis of results and writing of this review were carried out. **Results:** Through this review study it was possible to demonstrate that phosphorylation of tau protein in specific locations determines deposits of intraneuronal neurofibrillary tangles that are characteristic, although not specific, of DND including Alzheimer’s, dementia, parkinsonian disorders (PD), progressive supranuclear palsy (PSNP) and corticobasal degeneration (CBD). These specific changes contribute to the destabilization and disruption of cytoskeletal structures. **Conclusion:** It was possible to identify that the site-specific phosphorylation of tau protein can regulate the interaction with microtubules and predict neurodegenerative diseases.

**Keywords:** Neurodegenerative Diseases; Phosphorylation; tau proteins.

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