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Conformations of Tau in Dynamic Assemblies

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The microtubule-associated protein Tau plays a key role in Alzheimer's disease (AD). In healthy conditions, Tau binds to tubulin and microtubules, promotes tubulin polymerization and regulates microtubule dynamics in neurons. However, during the course of AD, Tau aggregates into oligomers and amyloid fibrils, which further associate into neurofibrillary tangles in the intracellular space. The appearance and distribution of Tau aggregates correlates with the loss of neurons and cognitive functions in AD.

We use NMR spectroscopy in combination with other biophysical tools to study the structure and dynamics of Tau in different physiological and pathological states. I will report on our recent findings regarding:
- Liquid-liquid phase separation of Tau
- Molecular recognition of Tau by the human Hsp90 chaperone system

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