Physical-chemistry methods for study of protein-protein interactions involved in neurodegenerative diseases

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Biophysical Chemistry
RESEARCH OBJECT: 14-3-3/complexes
Phosphorylation of the regulatory domain of human tyrosine hydroxylase 1 monitored using non-uniformly sampled NMR

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HIGHLIGHTS

- Disordered part of regulatory domain of human tyrosine hydroxylase 1 was assigned.
- Transient alpha-helices are present next to phosphorylation sites S40 and S19.
- The secondary structure does not change after phosphorylation.
- The phosphorylation kinetic rates were measured efficiently using time resolved NMR.

GRAPHICAL ABSTRACT
Hritz J.; Byeon I-J.; Krzysiak T.; Martinez A.; Sklenář V.; Gronenborn A.M. Dissection of binding between a phosphorylated tyrosine hydroxylase peptide and 14-3-3ζ: a complex story elucidated by NMR. Biophys. J. 2014, 107, 2185-2194
14-3-3: NEURODEGENERATION

Alzheimer
Parkinson
Lateral sclerosis
ALZHEIMER DISEASE: 14-3-3+Aβ

BIOPHYSICAL CHEMISTRY
14-3-3 KINETIC ASSAY: FRET

- Experimental Biophysical Chemistry – fluorescence assays
- Computational Biophysical Chemistry – structural and free energy calculations of dimer/monomer equilibria
HANDS ON EXPERIENCE
CONFERENCES AND INTERNSHIPS
SUITABLE CANDIDATES
OPEN POSITIONS

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