Structure and Dynamics Of Macromolecules In Solution By NMR

https://neurodegenerationresearch.eu/survey/structure-and-dynamics-of-macromolecules-in-solution-by-nmr/

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Country

USA

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Structure and Dynamics Of Macromolecules In Solution By NMR

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Research Abstract
Research in this laboratory is centered around solution studies on the structure and dynamics of proteins, protein-protein complexes and protein-nucleic acid complexes using multidimensional NMR spectroscopy, and on the development and application of novel NMR and computational methods to aid in these studies. We have devoted significant efforts towards detecting, characterizing and visualizing highly transient, sparsely-populated states that are invisible to conventional biophysical and structural techniques, yet play a key role in numerous biological processes including recognition, allostery, signal transduction, etc…. by means of paramagnetic

relaxation enhancement (PRE) and novel relaxation methods, including Dark state exchange saturation transfer spectroscopy recently developed in our laboratory. Using these approaches we have been able to characterize sliding and hopping of a multidomain transcription factor on DNA, to characteristize the mechanistic details involving encounter complex formation in protein-protein interactions, to study the exchange between monomeric and protofibril forms of amyloid Abeta, and to investigate the interactions of proteins and intrinsically disordered polypeptides with the chaperonin GroEL. In the latter instance, we have shown that apo GroEL catalyzes the partial unfolding of protein domains.

Further information available at:

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Investments < €500k

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United States of America

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