Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad - 500107

Seminar

Investigation of Role of Cosolutes on Conformational Landscape of Macromolecules

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Many organisms can survive in extreme environments by accumulating small organic molecules (cosolutes) inside the cell to cope up with the environmental stresses. These cosolutes can alter the conformational equilibria of the biomacromolecules. Here, we try to investigate the molecular mechanism of the stabilizing cosolutes towards macromolecular conformational landscape in the context of the effect of supercooled glass-forming liquid and osmolytes (TMAO, glycine, betaine etc.) on the stability of a macromolecule and macromolecular assembly. We focus on the mechanism of the cosolute-induced stabilization of the macromolecules in terms of the conformation-dependent exclusion/binding of the cosolutes from/to the macromolecules regarding the hydrophobic and electrostatic interactions. We believe that these works will help us to study the long-term stability analysis of biomolecules in the context of biopreservation and to understand the role of cosolutes in maintaining cellular homeostasis.

Wednesday, Nov 20th 2019

4:00 PM (Tea/Coffee at 3:30 PM)

Auditorium, TIFR-H