

Internal Seminar

Structural Investigation of Thermodynamically Unstable Proteins using NMR and other Biophysical Techniques

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Protein destabilization occurs under an array of conditions, resulting in various life threatening diseases, ranging from diverse forms of cancer to protein aggregation. In my doctoral research, I have studied thermodynamically unstable proteins by investigating their change in conformational dynamics using solution NMR. Mutation in the DNA binding domain (DBD) of p53 is associated with ~50% of known human cancers. We studied the changes in the conformational dynamics of wild-type p53DBD in comparison with two “hotspot” DNA contact mutants, by analysing backbone amide chemical shift perturbations and ^{15}N -spin relaxation measurements. Subsequently, we studied a human immunoglobulin light chain variable domain protein (Len), whose mutated version is responsible for light chain amyloidosis. There, we studied the temperature dependent formation of intermediate states of Len using solution NMR and extracted various thermodynamic parameters to understand the nature of misfolding in this protein.

Tuesday, Apr 10th 2018

2:00 PM (Tea/Coffee at 1:30 PM)

Seminar Hall, TIFR-H