
Students' Annual Seminar

Measurement of sub-nanomolar solubility of amyloid proteins

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Amyloid fibrils are one dimensional assembly of proteins involved in multiple diseases such as Alzheimer's and Parkinson's disease. Literature data on solubility of amyloid proteins determined in vitro is several orders of magnitude higher than the solubility observed in vivo. In this talk I will present our data on measurement of solubility of amyloid-beta peptide using two approaches. In the first approach the protein monomers are allowed to aggregate until completion of aggregation. The concentration of the monomers in equilibrium with the amyloid fibrils is then measured to determine the solubility. In the second approach amyloid fibrils are diluted into buffer and allowed to dissolve. Upon completion of the dissolution concentration of the protein monomers present in equilibrium with the fibrils is measured to determine the solubility. We have found that the solubilities measured using the first approach is higher by a few orders of magnitude than measured using the second approach. We conclude that these discrepancies arise due to differences in the conformations of the protein in the self-assembled and the monomeric states.

Thursday, Dec 3rd 2015

4:30 PM (Tea/Coffee at 3:45 PM)

Seminar Hall, TCIS