Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Internal Webinar

Design, Synthesis of Novel Organic Molecules towards Early-Stage Detection of Amyloid Fibrils and their Mechanistic Role in Protein Misfolding Disease

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Abnormal aggregation of amyloidogenic proteins (like, Ab 42, amylin, a-synuclein, insulin) and deposition of these aggregates are believed to be associated with the several diseases known as amyloidosis. Scientists have devoted much more efforts at devising new fluorescent molecular probes to estimate the mechanism of its formation, and gained radical information about the possible therapeutics' routes of amyloidosis but there are some serious drawbacks. Hence, the smart biocompatible fluorescent probes are indispensable, which can overcome the drawbacks of conventional fluorescence probes. Additionally, establishing a potent scheme against aggregation of protein involved in several neurological disorders has been evaluated as a promising route to identify compounds that promote the aggregation process of protein. In the last two decades, this perspective has guided a dramatic increase in the efforts, focused on developing potent drugs either for retardation or promotion of the self-assembly process of proteins. Overall, in these works we focus on the development of systematic schemes on designing and synthesis of novel organic molecules for early-stage detection of amyloid fibrils (a-synuclein, Insulin) as well the modulation of the pathway protein aggregation.

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