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Sub: Citation of Nomination of Dr. Krishnananda Chattopadhyay for Sun Pharma Research Award 2023.

Dr. Chattopadhyay initiated an interdisciplinary biophysics laboratory at CSIR-IICB and studied complex problems of infections and neurodegenerations. His work on the early stages of protein aggregation in the context of neurodegenerative diseases has been particularly impressive, for which he used Parkinson's Disease (PD) and ALS as models.

It is well known that the aggregation of related proteins (for example, Alpha Synuclein in PD) eventually leads to fibril formation. Since the fibrils are well characterized by spectroscopy and structural biology, they have been targeted by many academic and industrial research groups for therapeutic discovery and development efforts, which unfortunately yield no cure. After joining in CSIR-IICB on Dec 2006, Dr. Chattopadhyay took up a high risk project to study the early stages of the aggregation, which was completely unexplored at that time. Because of the heterogeneity and transient nature of the intermediates which populate minimally at the early stage, there was no structure available and no systematic drug development was attempted. In the last decades, Dr. Chattopadhyay's group developed a working model of the early stage of Alpha Synuclein aggregation, generated experimental proof of concepts and eventually provided the first structure of a non-toxic intermediate, which they populated by targeting a specific amino acid. In addition, his group provided the first time understanding of how different mutants of SOD1 can be related to severity of ALS.

(Dr. Asit K. Chakraborti)

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