

Dr. Shalmali Chakraborty

Associate Professor

Department of Chemistry

Bejoy Narayan Mahavidyalaya

Itachuna, Hooghly, PIN 712147

Email id: shalmalichakraborty@yahoo.com

shalmali @bnmv.ac.in

Ph: 9836251302



Education

Master of Science: Physical Chemistry

Jadavpur University

Qualified for National Eligibility Test, CSIR fellowship

Ph.D : Biochemistry

Bose Institute

Thesis: Structural Studies on Tubulin: Ligand Binding and Conformation

Post Doctoral Research Trainee

University of North Carolina, Chapel Hill

Regulation of Prothrombin Activation by Phosphatidylserine (PS)

Teaching Experience

More than 22 years (Honours and General Course) at Bejoy Narayan

Mahavidyalaya, Itachuna

Research Experience:

Biophysical characterization of microtubular protein tubulin using spectroscopic tools like spectrophotometry, fluorescence, circular dichroism etc. Characterization of tubulin as chaperone protein in its ability to suppress thermally and chemically induced aggregation of other proteins and assist refolding, investigation of mechanism of action of colchicine site agents through a wide variety of methodologies like tissue culture, immunofluorescence and, large scale purification of proteins, turbidimetry, column chromatography, drug binding assays, thin-layer chromatography to find the effects on cell growth, tubulin assembly and radio labeled colchicine binding. Structural studies on tubulin by GTP and bis ANS.

Regulation of blood clotting and diseases arising from deficiencies in the presence of various clotting factors and in regulation of their activities, role of platelet membranes in regulating thrombin generation and the role of soluble phosphatidylserine that mimics all of the properties of the membrane, thus proving that phosphatidylserine, and not the membrane surface, regulates thrombin formation. The technology employed in these studies is now patented, and it has spawned a biotechnology company that is developing soluble phospholipid mimics for use in clinical coagulation assays.

Selected Conference Presentations and Lectures:

- Invited Lecture at International Conference on Biophysics and Biochemistry and Program in Molecular and Cellular Biology at University of North Carolina at Chapel Hill.
- Presented at ASH Conference, Georgia, Atlanta

Published Papers

1. **Chakraborty S**, Sarkar N, Bhattacharyya B.
Nucleotide dependent bisANS binding to tubulin.
Biochimic Biophys Acta. 1999 Jul 13;1432(2):350-5
2. Gupta S, **Chakraborty S**, Poddar A, Sarkar N, Das KP, and Bhattacharyya B
BisANS Binding to Tubulin: Isothermal Titration Calorimetry and the Site-specific Proteolysis Reveal the GTP-induced Structural Stability of Tubulin.
Proteins, 2003 Feb 1; 50(2):283-9
3. **Chakraborty S**, Gupta S, Sarkar T, Poddar A, Pena J, Solana R, Tarazona R, Bhattacharyya B.
The B ring substituent at C-7 of colchicines and the alpha C-terminus of tubulin communicate through the "tail-body" interaction.
Proteins, 2004 Nov 15;57(3) :602-9
4. Chattopadhyay R, Jacob R, **Sen S**, Majumder R, Tomer Kenneth B, Lentz B,R.
Fuctional and Structural Characterization of Factor Xa Dimer in Solution.
Biophysical Journal, Volume 96, February 2009 974-986
5. **Sen S**, Banerjee M, Majumder R, Kopakka V, Zhou C, Lentz B.R
Phosphatidylserine (PS) Binding Sites in Kringle Modules Regulate Domain Organization and Conformation of Bovine Prothrombin.
Biophysical Journal, Volume 94, February 2015