

Dr. SAMUDRA PROSAD BANIK



Designation: Assistant Professor & Head

About Me: I did my graduation in Microbiology from C.U. and thereafter completed my Masters from the Department of Biophysics and Molecular Biology under the same University in the year 2003. I went on to do my Ph.D. from Indian Institute of Chemical Biology, Kolkata in 2009.

Qualifications: M.Sc. Ph.D.

- UGC-JRF in 2003
- Recipient of travel grant from International Rice Research Institute, Philippines in 2003.
- Ph.D. from Jadavpur University (IICB) in 2009 on biophysical characterisation of industrially important enzyme aggregates from filamentous fungus.

Current Teaching:

- I am the course instructor for Biophysics (Thermodynamics and Spectroscopy), Biostatistics (Preliminary concepts of probability, tools of descriptive and inferential statistics and their applications in biology), Protein chemistry (amino acids and their general reactions, protein structure) Molecular Biology (DNA structure and organisation, Central Dogma, Mutation, DNA damage and repair, Transposons) and History of development of Microbiology

Research Interests:

- Areas of interest:
 - a) Native and non-native aggregation of proteins in presence of small molecule osmolytes.
 - b) Structural and functional consequences of protein glycation.

Research grants:

- 2010- 2012: Principal Investigator "Isolation, partial purification and characterization of cellulolytic enzymes from a lemon isolate of filamentous fungus",UGC (University Grants Commission) Minor Research Project, sanction no.F.PSW- 054.
- 2015-2018: Principal Investigator "Effect of trehalose on aggregation of fungal glycosidases" UGC Major Research Project Ref No. MRP-MAJOR-BIOT-2013-18871 F. No. - 43-69/2014 (SR)_dated 23/07/2015

Selected Publications:

○ **Book Chapters (last five years)**

- Roy R, **Banik SP**, Saha SP, Upadhyay D (2018)"Antibacterial potential of natural products" in Life Sciences Protocol Manual published by DBT STAR College Scheme Edited by Reddy and Govil, Pgs 139-144.
- Ghosh R, **Banik SP** (2016) Dual Effects of Vanadium: Toxicity Analysis in Developing Therapeutic Lead-Ups. Food Toxicology In. Bagchi D, Swaroop A & Stohs SJ pp 337–354. CRC Press
- **Banik SP**, Khowala S, Pal C, Mukherjee S. (2015) Proteomic approaches to identify novel therapeutics and nutraceuticals from filamentous fungi: Prospects and Challenges. In: Bagchi D, Swaroop A, Bagchi M editors. Genomics, proteomics and metabolomics in nutraceuticals & functional foods (2nd Edition) pp. 265-295 Wiley Blackwell.

○ **Papers (last five years)**

- Das A, Basak P, Pramanick A, Majumder R, Pal D, Ghosh A, Guria M, Bhattacharyya M, **Banik SP**. (2019) Trehalose mediated stabilisation of cellobiase aggregates from the filamentous fungus *Penicillium chrysogenum*, International Journal of Biological Macromolecules, 127: 365-375.

- Das A, Basak P, Pattanayak R, Kar,T, Majumder, R., Pal, D, Bhattacharya A, Bhattacharyya, M., **Banik SP**. (2017) Trehalose induced structural modulation of Bovine Serum Albumin at ambient temperature, International Journal of Biological Macromolecules 105(1): 645-655.
- Chowdhury S, **Banik SP**, Majumder R, Ghorai S, Pal S, Basak P, Khowala S (2017) Prevention of protein aggregation by extracellular fungal sucrase of *Termitomyces clypeatus* Turkish Journal of Biochemistry 42(3), pp. 355-364 doi.org/10.1515/tjb-2016-0297
- Majumder R, **Banik, SP**, Khowala, S. (2016) AkP from mushroom *Termitomyces clypeatus* is a proteoglycan specific protease with apoptotic effect on HepG2. International Journal of Biological Macromolecules. 91:198-207.
- Majumder R, **Banik SP**, Khowala S (2015) Purification and characterization of a novel *k*-casein specific milk-clotting metalloprotease from *Termitomyces clypeatus* MTCC 5091. Food Chemistry 173: 441-448.
- **Banik SP**, Mukherjee S, Pal S, Ghorai S, Majumder R, Khowala S (2015) Enhancement of extracellular cellobiase activity by reducing agents in the filamentous fungus *Termitomyces clypeatus*. Biotechnology Letters 37:175-181

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Professional Memberships and Activities:

Life member of Biotech Research Society of India.