

Dr.Sibani Sen (Chakraborty) Ph.D.



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Academic Qualifications:

- B.Sc: Calcutta University, Chemistry hons.
- M.Sc: Kalyani University, Biochemistry
- Ph.D: Bose Institute (Degree conferred by Jadavpur University)
- Post-doctoral research experience: Brain Institute, University of Florida, USA
Saha Institute of Nuclear Physics, Kolkata

Positions held/ holding:

- Associate Professor & Head, Microbiology Department, West Bengal State University
- Assistant Professor, Microbiology Department, West Bengal State University
- Lecturer (contractual), Life Sciences and Biotechnology Dept. of Jadavpur University
- Lecturer, Post-Graduate Dept. of Microbiology at Acharya Prafulla Chandra College, New Barrackpore

Membership of Professional Bodies:

1. Member, The Society of Biological Chemists, India
2. Member, Indian Science Congress Association (ISCA)
3. Member, Microbiologists Society India (MSI)
4. Member, American Society for Microbiology (ASM)

EXTRAMURAL RESEARCH GRANTS: 3

S.I. No.	Title of the Project	Funding Agency	Duration
1.	Understanding structural basis for the biological specificity of proteolytic regulators of human meprins and bone morphogenic protein1 (Rs38,84600)	DBT, Govt. of India	3yrs, 2017-20

2.	Pharmacophore-based modeling of a series of novel ProcollagenC –proteinase inhibitors by virtual screening, molecular docking and molecular dynamics simulation study (Rs24,98000)	DBT,Govt.of West Bengal	3yrs,2017-20
3.	Comparative structural analysis of substrate specificity in astacin metalloendopeptidases by homology modeling (Rs30,15000)	DBT, Govt.of India	3yrs,2012-15

Courses taught:

Biomolecules & Enzymology, Biophysical Techniques, Metabolism & Bioenergetics, Bioinformatics & Biostatistics, Proteomics& Genomics.

Research Interests: Bioinformatics and Environmental Microbiology

Publications: 40 research papers and 04 book chapters

Book Chapters

Sibani Chakraborty, Ankur Chaudhuri and Asim K. Bera. Book title: ***Proteases in Physiology and Pathology***. Chapter 4 - Role of BMP1/ tolloid like proteases in bone morphogenesis and tissue remodelling. Pages: 77-88, ISBN: 978-981-10-2512-9, Date: 12.09.2017, **Springer**. DOI: 10.1007/978-981-10-2513-6_4

Sibani Chakraborty, Asim K. Bera, Ankur Chaudhuri and Satyajit Sen. Book title: ***Proteases in Human Diseases***. Chapter11 - Metalloproteases and Human Diseases: The Astacin Family. Pages: 227-245, ISBN: 978-981-10-3161-8, Date: 14.07.2017, **Springer**. DOI: 10.1007/978-981-10-3162-5_11

Archana Pan, G. Pranavathiyani and **Sibani Sen Chakraborty**. Book title: ***Molecular docking for Computer-Aided drug Design- Fundamental Techniques, Resources and Applications***. Chapter 8- Computational Modeling of Protein Three Dimensional Structure: Methods and resources. Pages 155-178, ISBN: 978-012-822312-3, Academic Press, **Elsevier Inc**, February 2021

Sibani Sen Chakraborty, Ankur Chaudhuri and Asim Bera. Book Title: ***Handbook of Oxidative Stress and Cancer: Mechanistic Aspects (Living Reference)***, Chapter- Meprins: Ancient Enzymes Newly Discovered in Cancer Progression. Pages 1-12, First online: 28 October 2021, Springer

GenBank (NCBI) accessions-

- 16S r RNA gene sequence of Serratia sp. strain from medicinal factory waste water: GenBank Accession No. KT877002
- Staphylococcus sp. LAC9 16S ribosomal RNA gene, partial sequence. GenBank Accession No: KT306679.1

Peer-reviewed journals (2014 onwards)

Sisir Rajak, Shaikh Rajesh Ali, Baidyanath Pal and **Sibani Sen Chakraborty** (2025). A statistical insight to exploration of medicinal wastewater as a source of thermostable lipase-producing microorganisms. *Plos One* 20(2): e0319023. <https://doi.org/10.1371/journal.pone.0319023>

Priyasi Mallick, Syeda Sagufta Sultana and **Sibani Sen Chakraborty** (2023). Isolation, Preliminary characterization and anti-microbial activity study of lipase producing bacteria from medicinal waste. *International Journal of Current Research* Vol. 15, Issue 08, pp.25652-25655, August, 2023

Sibani Sen Chakraborty (2023). Microbial Lipases: Versatile Enzymes which hold immense potential in Industrial Application. *International Journal of Microbiology and Biotechnology*. Vol8, Issue2, 37-42

Shaikh Rajesh Ali, Syeda Sagufta Sultana, Sisir Rajak, Prosun Tribedi, **Sibani Sen Chakraborty** (2022). Serratia sp. sc11: Isolation of a novel thermostable lipase producing microorganism which holds industrial importance. *Antonie van Leeuwenhoek*. Nov;115(11):1335-134.

Ashikur Rahaman, Ankur Chaudhuri, Arnab Sarkar, **Sibani Chakraborty**, Shamee Bhattacharjee, Deba Prasad Mandal (2022). Eucalyptol targets PI3K/Akt/mTOR Pathway to inhibit Skin Cancer Metastasis. *Carcinogenesis*. Jun 27;43(6):571-583.

Debarati Mukherjee, MdYousuf, Somaditya Dey, Sondipon Chakraborty, Ankur Chaudhuri, Vinay Kumar, Biswajyoti Sarkar, Supriya Nath, Aabid Hussain, Aritri Dutta, Tanushree Mishra, Biswajit Gopal Roy, Sushma Singh, **Sibani Chakraborty**, Susanta Adhikary and Chiranjib Pal (2020). Targeting the Trypanothione Reductase of Tissue-Residing Leishmania in Hosts' Reticuloendothelial System: A Flexible Water-Soluble Ferrocenylquinoline-Based Preclinical Drug Candidate. *Journal of Medicinal Chemistry*, 63, pp 15621-15638.

Yuthika Dholey, Ankur Chaudhuri and **Sibani Sen Chakraborty** (2020). An integrated in-silico approach to understand protein – protein interactions: Human meprin β with Fetuin A. *Journal of Biomolecular Structure and Dynamics* 38(7), pp 2080-2092.

Ankur Chaudhuri, Roishinique Johnson, Kuntol Rakshit, Andrea Bednaroa, Kimberley Lackey, **Sibani Sen Chakraborty**, Natra Krishnan and Ananthbandhu Chaudhuri (2020). Exposure to Spectracide® causes behavioral deficits in Drosophila melanogaster: Insights from locomotor analysis and molecular modelling. *Chemosphere* 248:12037.

Ankur Chaudhuri, Nandagopal Hudait and **Sibani Sen Chakraborty** (2019). Pharmacophore modeling coupled with molecular dynamic simulation approach to identify new leads for meprin- β metalloprotease. *Computational Biology and Chemistry*. Vol80, pp292-306

Ankur Chaudhuri; Sampa Biswas & **Sibani Chakraborty** (2019). Exploring protein–protein intermolecular recognition between meprin- α and endogenous protease regulator cystatinC coupled with pharmacophore elucidation. *Journal of Biomolecular Structure and Dynamics*, Vol 37, No 2, 440-453

Shaikh Rajesh Ali, Syeda Sagufta Sultana, Sisir Rajak and **Sibani Sen Chakraborty** (2019). Isolation, Identification and Characterization of a novel thermostable lipase from Serratia marcescens sc11. *European Journal of Biomedical and Pharmaceutical Sciences*. Vol6, Issue8, pp11-10

Niladri Biswas, Ankur Chaudhuri, **Sibani Chakraborty**, Chirantan Roy Choudhury (2019). Example of square planar Copper (II) biuret complex: Crystal structure, DNA and Protein binding activity and Molecular docking study. *Inorganic and Nano-Metal Chemistry*. Vol 80, Issue10, pp495-507

Niladri Biswas, Sumit Khanra, Arnab Sarkar, Shamee Bhattacharjee, Deba Prasad Mandal, Ankur Chaudhuri, **Sibani Chakraborty**, Chirantan Roy Choudhury (2019). Example of two novel thiocyanato bridged copper (II) complexes derived from substituted thiosemicarbazone ligand: Structural elucidation, DNA/albumin binding, biological profile analysis and molecular docking

study. *Journal of Biomolecular Structure and Dynamics*. Vol37, Issue11, pp2801-2822

Ankur Chaudhuri & **Sibani Chakraborty**(2018). Structure-activity relationship of astacin metalloproteases: A comparative study using EDTA. *Current Enzyme Inhibition*, Vol 14, No 2, 131-140.

Sriparna Mukherjee, Nabonita Sengupta, Ankur Chaudhuri, Noopur Singh, Irshad Akbar, **Sibani Chakraborty**, Amol Suryawanshi, Arindam Bhattacharyya, Anirban Basu (2018). PLVAP and GKN3 are two critical host cell receptors which facilitate Japanese encephalitis virus entry into neurons. *Scientific Reports*, 8:117884

Niladri Biswas, Sumit Khanra, Arnab Sarkar, Shamee Bhattacharjee, Deba Prasad Mandal, Ankur Chaudhuri, **Sibani Chakraborty**, Chirantan Roy Choudhury (2017). One new azido bridged dinuclear copper (II) thiosemicarbazide complex: Synthesis, DNA/protein binding, molecular docking study and cytotoxicity activity. *New J Chem*, 41, 12996-13011.

Niladri Biswas, Sumit Khanra, Arnab Sarkar, Shamee Bhattacharjee, Deba Prasad Mandal, Ankur Chaudhuri, **Sibani Chakraborty**, Chirantan Roy Choudhury. Cytotoxicity activity, in silico molecular docking, DNA and protein binding study of one Ni(II) complex constructed from N4 coordinating ligand (2018). *Journal of Coordination Chemistry*, Vol71, No16-18, 2740-2766

Jyotirmay Maiti, Suman Biswas, Ankur Chaudhuri, Sandipan Chakraborty, **Sibani Chakraborty**, Ranjan Das (2017). Environment sensitive fluorescent analogue of biologically active oxazoles differentially recognizes human serum albumin and bovine serum albumin: Photophysical and molecular modeling studies. *Spectrochimica Acta Part A Molecular and Biomolecular Spectroscopy* 175:191-195, March 2017

Ankur Chaudhuri, Indrani Sarkar, A. K. Bera, **Sibani Chakraborty***(2016). Screening inhibitors of human meprins: Insights from analysis of binding sites by molecular dynamics simulation. *Combinatorial Chemistry and High Throughput Screening*, Vol.19. No.3, pp246-58.

Suvadip Mallick, Aritri Dutta, Ankur Chaudhuri, Debasri Mukherjee, Somaditya Dey, Subhadra Halder, Joydip Ghosh, Debarati Mukherjee, Sirin Salma Sultana, Gunjan Biswas, Tapan Kumar Lai, Pradyumna Patra, Indranil Sarkar, **Sibani Chakraborty**, Bhaskar Saha, Krishnendu Acharya, Chiranjib Pal*(2016). Successful Therapy of Murine Visceral Leishmaniasis with Astrakurkurene, a Triterpene Isolated from the Mushroom *Astraeus hygrometricus*, Involves the Induction of Protective Cell-Mediated Immunity and TLR9. *Antimicrobial agents and Chemotherapy*, Vol.60, No.5, pp2696-2708

Ankur Chowdhury, Tanmoy Dutta, Joydip Ghosh, Samir Kumar Saha, Suman Biswas, **Sibani Chakraborty**, Soumen Bhattacharjee, Chiranjib Pal, Ipsit Chakraborty, Hemanta Chowdhury, Narayan Ghorai*(2016). Isolation of a Major Host Plant Terpenoid and its probable impact on the degenerative growth of female Indian lac insect, *Kerria lacca*(Kerr.). Sondipon Chakraborty, *Journal of Entomology and Zoology Studies*, Vol.4, No.4, pp1351-1358.

Priyanka Mukhopadhyay, Satyajit Sen, Gopal Mondal, Aresh Banerjee and ***Sibani Chakraborty** (2015). Risk of respiratory diseases associated with beedi workers of North 24 Parganas in West Bengal, India. *International Journal of Current Research* Vol. 7, Issue, 09, pp.20607-20610, September, 2015

Ankur Chaudhuri, Indrani Sarkar and **Sibani Chakraborty***(2014). Comparative analysis of binding sites of human meprins with hydroxamic acid derivative by molecular dynamics simulation study. *Journal of Biomolecular Structure and Dynamics*, USA. Vol32, Issue Number12, 1969-78.

Invited talks delivered

- **Sibani Sen Chakraborty*** (2023). “*Serratia marcescens* sc11: Partial purification and biochemical characterization of a novel thermostable extracellular lipase”. National seminar on Recent

Trends in Biochemistry and Molecular Biology, RBC College, Naihati, 27th-28th April.

- Invited Speaker at an induction program at Vijaygarh Jyotish Ray College, 19th December, 2023
- Sibani Sen Chakraborty*(2020). “Enhancing interdisciplinary approaches via integrating Biology with Chemistry”. WEBINAR at Narula Institute of Technology (JIS group), 11th May at 7p.m.
- Sibani Sen Chakraborty* (2020). UGC-SAP (DRS II) Sponsored National Conference on Stress Responses and Diseases (SR&D), Department of Biochemistry and Biophysics, University of Kalyani, 6th& 7th March.
- Sibani Sen Chakraborty*(2019).“Partial purification and biochemical characterization of a novel thermostable extracellular lipase from *Serratia marcescens* sc11 isolated from medicinal waste”. International Conference on Medical, Biological and Pharmaceutical Sciences (ICMBPS-19), Bali, Indonesia, 26th October.
- Sibani Chakraborty* (2017). “Exploring Protein-Protein Intermolecular Recognition between Meprin- α and Endogenous Protease Regulator CystatinC coupled with Pharmacophore Elucidation”., Assam University 27-28th July
- Ankur Chaudhuri and Sibani Chakraborty* (2016). “Probing biophysical interactions between human meprin - α and cystatinC”., Consortium for an integrated research on molecular medicine: Search for novel biopharmaceuticals from natural resources of West Bengal (CIRMM, WBSU), 25th-26th February, West Bengal State University.
- Ankur Chaudhuri and Sibani Chakraborty* (2016).“Integrating pharmacophore modeling and virtual screening with molecular docking in designing novel inhibitors against human bone morphogenic protein1”7th ICDDT, University of Sharjah, Sharjah, UAE, Feb15th. -18th.
- Special lecture at APC College, Kolkata on 9th. January, (2016). “Structure Based Drug Design: Integrating Chemistry with Biology”.
- Ankur Chaudhuri, Asim K. Bera, Indrani Sarkar and Sibani Chakraborty* (2013). “Screening inhibitors of human meprins: Insights from analysis of binding sites by molecular dynamics simulation”., Symposium on Frontiers in Modern Biology 2013, IISER- Kolkata, 9th and 10th. November

Administrative Experience:

- Chairperson & Member of Post- Graduate Board of Studies in Microbiology, West Bengal State University
- Chairperson & Member of Under Graduate Board of Studies in Microbiology, West Bengal State University
- Member of Grievance Redressal Committee of West Bengal State University
- Member of PG Exam Monitoring and Regulations Review Committee of West Bengal State University
- External Member of Post- Graduate Board of Studies in Department of Biological Sciences, Aliah University
- External Member of Post- Graduate Board of Studies in Microbiology, Vivekananda Centenary College (autonomous), Rahara
- Member of Post- Graduate Board of Studies in Microbiology, BRSNC, BNC & APC College
- Coordinator, Undergraduate board of Studies in Molecular Biology, West Bengal State University, 2017-2019
- Member of Undergraduate Board of Studies in Microbiology & Molecular Biology, West Bengal State University, 2009-2012
- Moderator, Paper-setter, and External Examiner of various PG & UG Courses at several

universities which include Amity, SNU, Brainware, St. Xavier's College Kolkata (autonomous), Vidyasagar and Calcutta University

- Appointment as Subject Expert in connection with recruitment to the post of General Service, Food Safety Officer under Health & Family Welfare Department, Govt. of West Bengal (2022 & '23)
- Invited as a Member of Technical Expert Committee for the screening of E-Yuva and Innovation fellows at E-Yuva Center of Adamas University (BIRAC sponsored) on 19th & 22nd April, 2024

Conferences/ Seminars/ Webinars organised:

- Organising Secretary of a one day symposium organized by the Dept. Of Microbiology, West Bengal State University titled "Global Challenges in Biology: The Journey From Genes to Disease" 2010
- Joint Convenor of a DST-sponsored National Conference organized by the Dept. Of Microbiology, West Bengal State University titled "Advancing Biology Through Technology and Computation" on August 22, 2014
- Convener, One day workshop on "Implementation of CBCS in the syllabus of Molecular Biology" at West Bengal State University on 24th April, 2018
- Convener, One day workshop on "Designing of Molecular Biology (honours) syllabus as per CBCS guidelines" at West Bengal State University on 9th April, 2019
- Organising Secretary in a national webinar titled "Impact of Viral Diseases Challenging Human Lives" on 18th August, 2020
- Convener and Organising Secretary of Invited Lecture Series 1&2 (online) organised by the Department of Microbiology, WBSU on 11th & 23rd June, 2021
- Convener & Organising Secretary of National webinar (online) titled "Innovation in life science from lab to practices" organized by the Department of Microbiology on 27th August, 2021
- Advisory committee member in a one day national level seminar at APC college titled "Recent Trends in Microbiology RTM 2023"
- Organising Secretary of Invited Lecture titled "Food safety: The Way to Healthy Society" by Dr. Aparajita Majumder on 23rd august, 2024
- Advisory committee member in the 1st National Conference on "Emerging Trends on Bioscience Research (ETBR)" on 5th & 6th February, 2025 organised by the Department of Biological Sciences, Aliah University,