Faculty Details

Name: prof Sunanda Bhattacharyya

Mail: sbtsl@uohyd.ernet.in

Contact: 04023134587

Area Of Research:Yeast genetics, Molecular and cellular Biology, Molecular Parasitology

Faculty Details

Prof Bhattacharyya completed B. Sc. degree in 1991 with Chemistry Hons. from the Scottish Church College, University of Calcutta and M. Sc. in Biochemistry from the University of Calcutta in 1993. She obtained the PhD degree from the Department of Biophysics, Bose Institute, Kolkata in 2000, where she worked on the solution structure of lambda repressor.

In 2000, she joined Professor Flyod Randy Bryant's laboratory at the Department of Biochemistry and Molecular Biology, Johns Hopkins University as a postdoctoral fellow, where she worked on the biochemistry of bacterial RecA protein. She started her second postdoctoral work in 2004 in Tulane University with Professor Charles Miller where she worked on role of Hsp90 in steroid hormone receptor signaling.

In 2009, she joined the Department of Biotechnology and Bioinformatics, University of Hyderabad. Dr. Sunanda Bhattacharyya's laboratory works on the roles of Hsp90 and its cochaperones on genome stability. Another focus of her research is understanding the mechanism of DNA replication (nuclear and mitochondrial) in human malaria parasite Plasmodium falciparum.

Dr. Bhattacharyya is the recipient of the prestigious POWER fellowship in the year 2023.

Notice Board

No Records Available

Students And Project Trainees

Students/Projects Trainees

Name Joined As Mail Contact

Akanksha Gotmare	Integrated MSc-PhD student	---	---
Priyanka Singh	PhD	---	---
Khushboo Rani	PhD	---	---
Ms. Iman Alkhatib	International PhD student	---	---
Ms. Khamitkar Shradha Ravindra	PhD student	---	---
Mansi Thakur	JRF	---	---
Apeksha Hedaoo	Integrated MSc./PhD student	---	---

Former Students/Projects Trainees

Name	Joined As	Working
Dr. SureshKumar Chalapareddy	PhD	Post doctoral fellow at the NIH, Bethesda, USA
Dr. Nidhi Khurana	Integrated MSc-PhD student	Chief Scientific Officer at the StemGenn Therapeutics, Coordinator, FABA Academy
Dr. Tanvi Suhane	PhD	Post doctoral fellow at the Department of Genetics The Hebrew University Jerusalem, Israel
Dr. Swati Chakraborti	Post Doctoral Fellow	
Dr. Shyamasree Laskar	PhD	
Dr. Shephali Bansod	Integrated MSc-PhD	CuraTeQ as Research Associate (Assistant Manager)
Dr. Nupur Fangaria	PhD	Loka Biosciences as Scientific Writer

Publications

32 Khushboo Rani, Akanksha Gotmare, Andreas Meyer, Ruchira menghal, Nashat Akhtar, Nupur Fangaria, Johannes Buchner and Sunanda Bhattacharyya (2024) , Identification of a chaperone-code resposible for Rad51-mediated genome repair , Journal of Biological Chemistry, ,,doi: 10.1016/j.jbc.2024.107342,.

31 Priyanka Singh, Wahida Tabassum, Nupur Fangaria, Sandeep Dey, Siladitya Padhi, Mrinal Bhattacharyya, Kota Arun Kumar, Arijit Roy, and Sunanda Bhattacharyya (2023) , Plasmodium Topoisomerase VIB and Spo11 constitute functional type IIB topoisomerase in malaria parasite and its possible role in mitochondrial DNA segregation , mSpectrum, ASM,,, IF - 9.043.

30 Priyanka Singh, Khushboo Rani, Akanksha Gotmare, Sunanda Bhattacharyya (2022) , A tale of Topoisomerases and the knotty genetic material in the backdrop of Plasmodium biology , Bioscience Reports, Portland Press,,42 (6): BSR20212847,.

29 Nupur Fangaria, Khushboo Rani, Priyanka Singh, Sandeep Dey, Kota Arun Kumar and Sunanda Bhattacharyya (2022) , DNA damage induced nuclear import of Hsp90 is promoted by Aha1 , Molecular Biology of the Cell, ASM,,,.

28 Wahida Tabassum, Sunanda Bhattacharyya, Shalu Verunan, Mrinal K. Bhattacharyya (2021) , Febrile temperature causes transcriptional down-regulation of Plasmodium falciparum Sirtuins through Hsp90 dependent epigenetic modification , Molecular Microbiology https://doi.org/10.1111/mmi.14692, ,,,.

27 Shephali Bansod, Navya Raj, Amjesh R, Achutshankar S. Nair and Sunanda Bhattacharyya (2021) , Molecular docking and molecular dynamics simulation identify a novel Radicicol derivative that predicts exclusive binding to Plasmodium falciparum Topoisomerase VIB , Journal of Biomolecular Structure and Dynamics, ,,,.

26 Wahida Tabassum, Priyanka Singh, Niranjan Suthram, Sunanda Bhattacharyya, Mrinal Kanti Bhattacharyya (2021) , Elevated DNA damage sensitivity in malaria parasite induced by the synergistic action between PfHsp90 inhibitor and PfRad51 inhibitor , Antimicrobial Agents and Chemotherapy, American Society for Microbiology,,,.

25 Payal Jha, Abhilasha Gahlawat, Sunanda Bhattacharyya, Sandeep Dey, Kota Arun Kumar, and Mrinal Bhattacharyya (2021) , Bloom helicase along with recombinase Rad51 repairs the mitochondrial genome of the malaria parasite , mSphere, ,,,.

24 Niranjan Suthram, Siladitya Padhi, Payal Jha, Sunanda Bhattacharyya, Gopalakrishnan Bulusu, Arijit Roy, Mrinal Kanti Bhattacharyya (2020) , Elucidation of DNA Repair Function of PfBlm and Potentiation of Artemisinin Action by a Small-Molecule Inhibitor of RecQ Helicase , mSphere, ASM,5,10.1128/mSphere.00956-20,19.

23 Shephali Bansod; Navneet Bung; Priyanka Singh; Niranjan Suthram; Himashree Choudhury; Arijit Roy; Gopalkrishnan Balusu; Sunanda Bhattacharyya (2020) , Elucidation of an essential function of the unique charged domain of Plasmodium topoisomerase III , Biochemical Journal, Portland Press,,Biochem J (2020) BCJ20200318.,.

22 Pratap Vydyam, Dibyendu Dutta, Niranjan Sutram, Sunanda Bhattacharyya and Mrinal Kanti Bhattacharyya (2019) , A Small molecule inhibitor of DNA recombinase Rad51 from Plasmodium falciparum synergizes with the anti-malarial drugs artemisinin and chloroquine , Journal of Biological Chemistry, American Society for Biochemistry and Molecular Biology,294,20,8171-8183.

21 Tanvi Suhane, Vijayalakshmi Prasad, Nupur Fangaria, Achutsankar S. Nair, Wahida Tabassum, Poorvaja Muley, Mrinal K. Bhattacharyya and Sunanda Bhattacharyya (2019) , Glu-108 in ScRad51 is critical for DNA damage induced nuclear function , mSphere, American Society for Microbiology,,,mSphere.00082-19.

20 Nidhi Khurana, Sayan Bakshi, Wahida Tabassum, Mrinal K. Bhattacharyya and Sunanda Bhattacharyya (2018) , Hsp90 is essential for Chl1 mediated chromosome segregation and sister chromatid cohesion , mSphere, American Society for Microbiology,,,doi: 10.1128/mSphere.00225-18.

19 Payal Jha, Shyamasree Laskar, Swati Dubey, Mrinal K Bhattacharyya and Sunanda Bhattacharyya (2017) , Plasmodium Hsp40 and human Hsp70: A potential cochaperone chaperone complex , Molecular and Biochemical Parasitology, Elsevier,214,10-13,.

18 Nidhi Khurana, Shyamasree Laskar, Mrinal K. Bhattacharyya and Sunanda Bhattacharyya (2016) , Hsp90 induces increased genomic instability towards DNA damaging agents by tuning down RAD53 transcription , Molecular Biology of the Cell, American Society for Cell Biology,,,10.1091/mbc.E15-12-0867.

17 Sureshkumar Chalapareddy, Swati Chakrabarti, Mrinal K. Bhattacharyya, and Sunanda Bhattacharyya (2015) , Radicicol mediated inhibition of Topoisomerase VIB-VIA activity of human malaria parasite Plasmodium falciparum , mSphere, American Society for Microbiology,,,10.1128/mSphere.0002515.

16 Nidhi Khurana, Sunanda Bhattacharyya (2015) , Hsp90, the concertmaster: tuning transcription , Frontiers in Oncology, ,,,doi: 10.3389/fonc.2015.00100.

15 Badugu SB, Nabi SA, Vaidyam P, Laskar S, Bhattacharyya S, Bhattacharyya MK (2015) , Identification of Plasmodium falciparum DNA Repair Protein Mre11 with an Evolutionarily Conserved Nuclease Function , PLoS One, ,,,10.1371/journal.pone.0125358.

14 Shyamasree Laskar, Sheeba K, Mrinal K. Bhattacharyya, Achuthsankar S. Nair, Pawan Dhar, Sunanda Bhattacharyya (2014) , Heat stress induced Cup9 dependent transcriptional regulation of Sir2 , Molecular and Cellular Biology, American Society for Microbiology,,,10.1128/MCB.01046-14.

13 Tanvi Suhane, Shyamasree Laskar, Siddheshwari Advani, Nabamita Roy, Shalu Varunan, Dibyendu Bhattacharyya, Sunanda Bhattacharyya, Mrinal Kanti Bhattacharyya (2014) , Both charged linker region and ATPase domain of Hsp90 are essential for Rad51 dependent DNA repair , Eukaryotic Cell, American Society for Microbiology,,,10.1128/EC.00159-14.

12 Suresh Chalapareddy, Mrinal Kanti Bhattacharyya, Seema Mishra, Sunanda Bhattacharyya (2014) , Radicicol confers mid schizont arrest by inhibiting mitochondrial replication in Plasmodium falciparum , Antimicrobial Agents and Chemotherapy , American Society for Microbiology,,,AAC.02519-13, 2014.

11 Nabamita Roy, Sunanda Bhattacharyya, Swati Chakrabarty, Shyamasree Laskar, Somepalli Mastan Babu and Mrinal Kanti Bhattacharyya (2014) , Dominant negative mutant of Plasmodium Rad51 causes reduced parasite burden in host by abrogating DNA double strand break repair , Molecular Microbiology, ,94,,353-366.

10 Shalu M. Varunan, Jaishree Tripathi, Sunanda Bhattacharyya, Tanvi Suhane, Mrinal Kanti Bhattacharyy (2013) , Plasmodium falciparum origin recognition complex subunit 1 (PfOrc1)functionally complements Δsir3 mutant of Saccharomyces cerevisiae , Molecular and Biochemical Parasitology , ,119,,28-35.

9 Sita Swati Achanta, Shalu M. Varunan, Sunanda Bhattacharyya and Mrinal Kanti Bhattacharyya (2012) , Characterization of Rad51 from apicomplexan parasite Toxoplasma gondii: an implication for inefficient gene targeting , PLoS One, ,,,7(7): e41925.

8 Abhishek Mazumder, Sumita Bandyopadhyay, Dale Lewis, Amlanjyoti Dhar, Sunanda Deb, Sucharita Dey, Pinak Chakrabarti, Sankar Adhya and Siddhartha Roy (2012) , A Genetic Network that Balances Two Outcomes Utilizes Asymmetric Recognition of Operator Sites , Biophysical Journal, ,102,,1580-1589.

7 Shyamasree Laskar, M. K. Bhattacharyya, Rama Shankar, Sunanda Bhattacharyya (2011) , Hsp90 controls Sir2 mediated gene silencing , PLoS One, ,,,6(8): e23406.

6 Charles A. Miller III, Xiaobing Tan, Mark Wilson, Sunanda Bhattacharyya, Sara Ludwig (2010) , Single plasmids expressing human steroid hormone receptors and a reporter gene for use in yeast signaling assays , Plasmids, ,63,,73-78.

5 M. K. Bhattacharyya, Sunanda Bhattacharyya (nee Deb), Jayabalasingham, B. and Kumar, N. (2005) , Characterization of kinetics of DNA-strand exchange and ATP hydrolysis activities of Plasmodium falciparum recombinase PfRad51 , Molecular and Biochemical Parasitology, ,139,,33-39.

4 Sumita Bandyopadhyay, Sunanda Deb, Sudeep Bose and Siddhartha Roy (2002) , Half-of-the sites reactivity of F235C lambda-repressor: implications for the structure of the whole repressor , Protein Engineering, ,15,,393-401.

3 Nandan K. Jana, Sunanda Deb, Bhabatarak Bhattacharyya, Nitai C. Mandal and Siddhartha Roy (2001) , Energetics of cooperative interaction studied using a mutant λ-repressor , Protein Engineering, ,13,,629-33.

2 Sunanda Deb, Sumita Bandyopadhyay and Siddhartha Roy (2000) , DNA sequence dependent and independent conformational changes in multipartite operator recognition by λ-repressor , Biochemistry, ,39,,3377-3383.

1 Sunanda Deb, Sumita Bandyopadhyay and Siddhartha Roy (1998) , Spectroscopic study of Y210C lambda repressor: implications for cooperative interaction , Protein Engineering, ,11,,481-87.

Projects

Title	Year	Duration	Amount(In Lakhs)	PI/I
Deciphering the regulatory function of Hsp90 cochaperone Ydj1 in Rad51 dependent HR mediated DNA repair pathway	2023	3	3000000	Sunanda Bhattacharyya (PI)
Molecular chaperone mediated cellular homeostasis of Ribonucleotide Reductase: implications on Plasmodium falciparum replication	2023	3	5500000000	Sunanda Bhattacharyya (PI)
Molecular and biochemical investigation of heat shock protein (PfHsp90) and its cochaperones in modulating DNA double strand break repair pathway of human malarial parasite Plasmodium falciparum	2022	3	7500000000	Sunanda Bhattacharyya (PI)
Understanding the mechanistic role of the Hsp90 chaperone system in Rad51 nucleoprotein filament formation	2022	1 and 1/2	3000000000	Sunanda Bhattacharyya (PI)

Role of Topoisomerase VI in the biology of malaria parasite	2018	3	7228000000	Sunanda Bhattacharyya (PI)
Role of Hsp90 in Rad51 mediated DNA repair	2016	3	1550000000	Sunanda Bhattacharyya (PI)
Structure function relationship of Hsp90 in yeast telomere	2014	3	4000000000	Sunanda Bhattacharyya (PI)
Cloning and characterization of Plasmodium falciparum Topoisomerase VI	2012	3	3000000	Sunanda Bhattacharyya (PI)
To study the role of Hsp90 in DNA double strand break repair pathway	2012	1	300000000	Sunanda Bhattacharyya (PI)