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Assistant Professor and Group Leader

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Date of Birth: 5th January 1987

Nationality: Indian

EDUCATION

- **Doctor of Philosophy (Ph. D.) – Biosciences** [Proteomics and infectious diseases] (2009-2014)
 - Institute: Department of Biosciences and Bioengineering, Indian Institute of Technology (IIT) Bombay, Mumbai, India
 - Date of Ph.D. defense: 18th November 2014
 - Received the "Excellence in Ph.D. Research" award
- **Master of Science (M. Sc.) – Biotechnology** (2007-2009)
 - Institute: Dr. Guha Centre for Genetic Engineering and Biotechnology (GCGB), University of Calcutta, Kolkata, India
 - Obtained First class – Second rank
- **Bachelor of Science (B. Sc., Hons.) – Microbiology** (2004-2007)
 - Institute: University of Calcutta, Kolkata, India
 - Obtained First class – First rank

RESEARCH EXPERIENCE

- Nov 2020 – **Assistant Professor and Group Leader - Department of Biotechnology, Indian Institute of Technology Hyderabad, India**
Present
Research area: Circadian clocks and sleep, Host and parasite circadian rhythms in infectious diseases, Mechanism of pharmacological modulators of circadian clocks, Systems biology, Clinical proteomics, and mass spectrometry
- Dec 2018 – **Senior Postdoctoral Fellow - Perelman School of Medicine, University of Pennsylvania, USA**
Oct 2020
Research topic: Non-canonical circadian rhythms in the absence of the core clock genes
- Dec 2016 – **Research Associate - Institute of Neurology, University College London, UK**
Dec 2018
Research topic: Quantitative proteomics to study mechanisms of action and cellular targets for circadian clock-modulating compounds

Dec 2016 – **Visiting Scientist - The Francis Crick Institute, UK**
 Dec 2018 Research topic: Multiplexed quantitative mass spectrometry to understand the underlying mechanisms of circadian rhythmicity and sleep-wake cycles

Dec 2016- **Visiting Scientist - University of Cambridge, UK**
 April 2017 Research topic: Systems biology approaches to understanding the cross-talk among circadian clocks, sleep-wake cycles, and metabolic networks

Feb 2015 - **Postdoctoral Research Associate - University of Cambridge, UK**
 Dec 2016 Research topic: Systems biology approaches to understanding the cross-talk among circadian clocks, sleep-wake cycles, and metabolic networks

June - Dec 2014 **Research Associate - IIT Bombay, India**
 Research topic: Proteomics and metabolomics analysis of *Plasmodium vivax* induced alterations in humans from different endemic regions of India

July 2009 - **Doctoral Research Fellow (Ph.D. Student) - IIT Bombay, India**
 June 2014 Research topic: Proteomics analysis of serum in vivax and falciparum malaria patients to investigate the pathogenesis and identify surrogate protein markers of infection

May - July 2008 **Summer Research Fellow - Centre for Cellular and Molecular Biology, India**
 Research topic: Characterization of the genes of recFOR and recBCD DNA repair pathways in the Antarctic psychrotrophic bacterium *Pseudomonas syringae* Lz4W

RESEARCH INTERESTS

Circadian clocks and sleep
 Neuropharmacology
 Systems biology

Infectious diseases
 Aging
 Clinical proteomics and mass spectrometry

Neurological and metabolic disorders
 Mental health

FELLOWSHIPS, AWARDS, AND HONOURS (SELECTED)

- 2023: Invited member of **Board of Studies (BoS), Department of Biotechnology, Woxsen University**
- 2023: Elected as an **Executive Committee member of the Indian Society for Chronobiology (InSC)**
- 2021: Selected for Affiliate Membership of the **Institute for Translational Medicine and Therapeutics, USA**
- 2020: **Elected to the Royal Society of Biology, UK**
- 2018: **Postdoctoral Research Fellowship** (2 years) - University of Pennsylvania, USA
- 2018: **Thermo Scientific Annual Tandem Mass Tag Research Award** (Research grant award - USD 7500)
- 2015: **Postdoctoral Research Fellowship** (3 years) - University of Cambridge, UK
- 2015: **Excellence in Ph.D. Research Award 2014-2015** - IIT Bombay, Mumbai, India
- 2015: **Industrial Research and Consultancy Centre (IRCC) - IIT Bombay Best Review Paper Award** for the Year 2014-2015
- 2012: **Congress Student Travel Stipend Award** - Human Proteome Organization (HUPO) 11th Annual World Congress, Boston, USA

- 2012: **International Travel Support Award** - Science and Engineering Research Board, Department of Science & Technology (DST), Government of India
- 2012: **Student Travel Support Award** - US Human Proteome Organization (US HUPO) 8th Annual Conference, San Francisco, USA
- 2012: **Best Oral Presentation Award** - In-House Symposium, Dept. of Biosciences and Bioengineering, IIT Bombay, Mumbai, India
- 2009: **Doctoral (Ph.D.) Research Fellowship** (5 years) - IIT Bombay, Mumbai, India
- 2009: **CSIR-UGC Eligibility for Lectureship** (All India Rank-71)
- 2009: **Graduate Aptitude Test in Engineering (GATE)** qualification- [98.56 percentile (All India Rank-186)]
- 2008: **Summer Training Project fellowship** - Centre for Cellular and Molecular Biology, Hyderabad, India

ACADEMIC ACTIVITIES, TEACHING, AND OUTREACH

- Acting as the thesis supervisor and mentor for 7 Ph.D. (2 PMRFs). and 3 M.Tech students
- Teaching courses for UG (B.Tech) and PG (M.Tech and Ph.D.) students at IIT Hyderabad
 - Proteomics: Techniques and Applications (BT6303)
 - Circadian Clocks: Mechanisms and Functions (BT6050)
 - Medical Microbiology and Infectious Diseases (BT5050)
 - Microbiology (BT2040)
- Invited faculty mentor in the School in Chronobiology and Chronomedicine 2023, King George Medical University (KGMU), Lucknow– organized by the Indian Society for Chronobiology and the Indian Society for Chronomedicine – January 2023
- Invited resource person in the Monsoon Advanced Proteomics School (MAPS) – 2022 organized by IIT Bombay and Department of Science & Technology (DST) – July 2022
- Invited resource person in the Proteomics Advanced Winter School (PAWS)-2021 organized by IIT Bombay and Department of Science & Technology (DST) – Nov 2021
- Instructor in the Continuing Education Program on Proteomics organized by IIT Bombay – Nov 2021
- Participated in the UK-India Programme on Precision Medicine as a delegate from the UK (organized by the UK Science & Innovation Network, GOV.UK) – Nov 2017
- Served as a course instructor for the "Gel-based Proteomics" workshop organized during the 6th Annual Meeting of Proteomics Society, India (PSI) - Dec 2014
- Served as an organizing committee member of the 6th Annual Meeting of Proteomics Society, India (PSI) and International Conference on "Proteomics from Discovery to Function" - Dec 2014
- Served as an organizing committee member of an Indo-US bilateral workshop entitled "Proteomics for Translational Research" supported by Indo-US Science & Technology Forum (IUSSTF) - Dec 2014
- Served as a Teaching Assistant for (i) Genetic Engineering and (ii) Molecular biophysics courses at IIT Bombay (2009-2010; During Ph.D. Program)
- Served as a Ph.D. intermediate at IIT Bombay for the dissertation/project work of eight undergraduate and post-graduate students and was involved in their day-to-day supervision

- Actively involved in the development of various e-Learning & Open-Learning curriculums and Virtual Lab initiatives -
 - "Sakshat" Virtual Biotechnology Engineering Labs: <http://www.vlab.co.in/>
 - Technology Enhanced Learning (NPTEL): <http://nptel.iitm.ac.in/>
 - Open-Source Courseware Animations Repository (OSCAR): <http://oscar.iitb.ac.in/oscarHome.do>
- Conducted hands-on training and crash courses on proteomics at IIT Bombay and many other institutes, including the Continuing Education Programme (CEP), IIT Bombay workshops

PUBLICATIONS

ORCID ID: 0000-0002-9960-5768; Scopus Author Identifier: 35975419900

Total Citation: 2388; h-index = 27; i10-index = 44 (Source – Google Scholar)

‡ Equal contribution; * Corresponding author

A. Journal Publications [54]

2022-2024

1. Kunjulakshmi R, Kumar A, et al., **Ray S**, Tiwari B, Kumar R. AagingBase: A Comprehensive Database of Anti-aging Peptides. *Database* 2024 (Accepted, In-press)
2. Bhatnagar A, Murray G, **Ray S***. Circadian biology to advance therapeutics for mood disorders. *Trends Pharmacol Sci.* 2023, 44(10), 689-704.
3. Rankawat S, Kundal K, Chakraborty S, Kumar R, **Ray S***. A comprehensive rhythmicity analysis of host proteins and immune factors involved in malaria pathogenesis to decipher the importance of the host circadian clock in malaria. *Front Immunol.* 2023, 14, 1210299.
4. Chakraborty S, Kannihalli A, Mohanty A, **Ray S***. The promise of proteomics and metabolomics for unraveling the mechanism and side effect landscape of beta-adrenoreceptor antagonists in cardiovascular therapeutics. *OMICS* 2023, 27(3), 87–92.
5. Banerjee S, **Ray S***. Circadian medicine for aging attenuation and sleep disorders: Prospects and challenges. *Prog Neurobiol.* 2023, 220, 102387.
6. Banerjee S, Chakraborty S, **Ray S***. Systems biology of Covid-19 and human diseases: beyond a bird's eye view, and toward One Health. *OMICS* 2023, 27(1), 2-5.
7. Jha PK, Valekunja UK, **Ray S**, Nollet M, Reddy AB. Single-cell transcriptomics and cell-specific proteomics reveal molecular signatures of sleep. *Commun Biol. Nature* 2022, 5(1), 846.

2019-2021

8. Puppala A, Rankawat S, **Ray S***. Circadian Timekeeping in Anticancer Therapeutics: An Emerging Vista of Chronopharmacology Research. *Curr Drug Metab.* 2021, 22, 998-1008.
9. Rando HM, MacLean AL, Lee AJ, Lordan R, **Ray S**, et al., Pathogenesis, Symptomatology, and Transmission of SARS-CoV-2 through analysis of Viral Genomics and Structure. *mSystems* 2021, 6 (5), e00095-21.

10. Lordan R, Rando HM, ..., **Ray S** (as a part of COVID-19 Review Consortium) Casey S Greene. Dietary Supplements and Nutraceuticals under Investigation for COVID-19 Prevention and Treatment. *mSystems* 2021, 6 (3), e00122-21.
11. Rando HM, Wellhausen W, Ghosh S,, **Ray S**. (as a part of COVID-19 Review Consortium) Casey S Greene. Identification and Development of Therapeutics for COVID-19. *mSystems*. 2021, 6(6), e0023321.
12. Ch R, Rey G, **Ray S**, Jha P, et al., Rhythmic glucose metabolism regulates the redox circadian clockwork in human red blood cells. *Nat Commun*. 2021, 12, 377.
13. Rajarshi K, Khan R, Singh MK, Ranjan T, **Ray S***, Ray S. Essential functional molecules associated with SARS-CoV-2 infection: Potential therapeutic targets for COVID-19. *Gene*. 2021, 768,145313.
14. **Ray S***, Reddy AB. COVID-19 management in light of the circadian clock. *Nat Rev Mol Cell Biol*. 2020, 21(9), 494-495.
15. Kumar V, **Ray S**, Aggarwal S, Biswas D, et al., Multiplexed quantitative proteomics provides mechanistic cues for malaria severity and complexity. *Commun Biol. Nature* 2020, 3(1), 683.
16. **Ray S***, Srivastava S. Virtualization of Science Education: A Lesson from the COVID-19 Pandemic. *J Proteins Proteom*. 2020, 11, 77-80.
17. **Ray S**, Srivastava S. COVID-19 Pandemic: Hopes from Proteomics and Multi-Omics Research. *OMICS* 2020. 24(8), 457-459.
18. Kumar V, **Ray S**, Ghantasala S, Srivastava S. An integrated quantitative proteomics workflow for cancer biomarker discovery and validation in plasma. *Front Oncol*. 2020,10, 543997.
19. **Ray S**, Valekunja UK, Stangherlin A, Howell SA, et al., Circadian rhythms in the absence of the clock gene *Bmal1*. *Science*. 2020, 367(6479), 800-806 [Featured in *Science*. 2020, 367(6479), 740-741].
20. **Ray S***, Lach R, Heesom KJ, Valekunja UK, et al., Phenotypic proteomic profiling identifies a landscape of targets for circadian clock-modulating compounds. *Life Sci Alliance*. 2019, 2(6), e201900603.

2016-2018

21. Rey G, Milev NB, Valekunja UK, Ch R, **Ray S**, et al., Metabolic oscillations on the circadian time scale in Drosophila cells lacking clock genes. *Mol Syst Biol*. 2018, 14(8), e8376 [Featured on journal cover page, and in *Mol Syst Biol*. 2018,14(9), e8567].
22. **Ray S**, Patel SK, Venkatesh A, Chatterjee G, et al., Quantitative proteomics analysis of plasmodium vivax induced alterations in human serum during the acute and convalescent phases of infection. *Nature Sci Rep*. 2017, 7(1), 4400.
23. **Ray S**, Patel SK, Venkatesh A, Bhawe A, et al., Clinicopathological analysis and multipronged quantitative proteomics reveal oxidative stress and cytoskeletal proteins as possible markers for severe vivax malaria. *Nature Sci Rep*. 2016, 6, 24557.
24. **Ray S**, Reddy AB. Cross-talk between circadian clocks, sleep-wake cycles, and metabolic networks: Dispelling the darkness. *Bioessays*. 2016, 38(4), 394-405.
25. Venkatesh A, Patel SK, **Ray S**, Chatterjee G, et al., Proteomics of *Plasmodium vivax* malaria: progress and potential. *Expert Rev Proteomics*. 2016, 13(8), 771-782.

2013-2015

26. Shah V, **Ray S**, Srivastava S. Calibration-free concentration analysis of protein biomarkers in human serum using surface plasmon resonance. *Talanta* 2015, *144*, 801-808.
27. **Ray S**, Kumar V, Bhav A, Singh V, et al., Proteomic analysis of *Plasmodium falciparum* induced alterations in humans from different endemic regions of India to decipher malaria pathogenesis and identify surrogate markers of severity. *J Proteomics*. 2015, *127*(Pt A):103-13.
28. Reddy JP, Sinha S, **Ray S**, Sathe GJ, et al., Comprehensive analysis of temporal alterations in cellular proteome of *Bacillus subtilis* under curcumin treatment. *PLoS One*. 2015, *10*(4), e0120620.
29. Reddy JP, **Ray S**, Sathe GJ, Gajbhiye A, et al., Comprehensive proteomic analysis of totarol induced alterations in *Bacillus subtilis* by multipronged quantitative proteomics. *J Proteomics*. 2015, *114*, 247-262.
30. Sharma S, **Ray S**, Mukherjee S, Moiyadi A, Sridhar E, Srivastava S. Multipronged quantitative proteomic analyses indicate modulation of various signal transduction pathways in human meningiomas. *Proteomics*. 2015, *15*(2-3), 394-407.
31. Reddy JP, **Ray S**, Sathe GJ, Keshava Prasad TS, et al., Proteomics analyses of *Bacillus subtilis* after treatment with plumbagin, a plant-derived naphthoquinone. *OMICS*. 2015, *19*(1), 12-23.
32. Gahoi N, **Ray S**, Srivastava S. Array-based proteomic approaches to study signal transduction pathways: prospects, merits and challenges. *Proteomics*. 2015, *15*(2-3), 218-231.
33. Reddy PJ^ψ, **Ray S^ψ**, Srivastava S. The quest of the human proteome and the missing proteins: digging deeper. *OMICS* 2015, *19*(5), 276-282.
34. **Ray S**, Bhav A, Srivastava S. Brainstorming the new avenues for translational proteomics research: first Indo-US bilateral proteomics workshop. *Current Proteomics* 2015, *12*, 75-79.
35. Gupta S^ψ, Reddy JP^ψ, **Ray S^ψ**, Atak A, et al., Meeting Report: "Proteomics from Discovery to Function:" 6th Annual Meeting of Proteomics Society, India and International Conference-A Milestone for the Indian Proteomics Community. *OMICS* 2015, *19*(6): 329-331.
36. Gupta S^ψ, Venkatesh A^ψ, **Ray S^ψ**, Srivastava S. Challenges and prospects for biomarker research: a current perspective from biomarker research. *Biochim Biophys Acta*. 2014, *1844*(5), 899-908.
37. **Ray S**, Patel S, Kumar V, Damahe J. Srivastava S. Differential expression of serum/plasma proteins in various infectious diseases: overlapping and inimitable signatures. *Proteomics Clin. Appl.* 2014, *8*, 53-72.
38. Sharma S^ψ, **Ray S^ψ**, Moiyadi A, Sridhar E, Srivastava S. Quantitative proteomic analysis of meningiomas for the identification of surrogate protein markers. *Nature Sci Rep.* 2014, *4*, 7140.
39. **Ray S**, Moiyadi A, Srivastava S. Biorepositories for cancer research in developing countries. *Nat Rev Clin Oncol.* 2013, *10*, 434-436.
40. Srivastava S, Özdemir V, **Ray S**, et al., E-learning booster in developing world. *Nature* 2013, *501*(7467), 316.

2010-2012

41. **Ray S**, Renu D, Srivastava R, Gollapalli K, et al., Proteomic investigation of *falciparum* and *vivax* malaria for identification of surrogate protein markers. *PLoS One* 2012, *7*(8), e41751.
42. **Ray S**, Srivastava R, Tripathi K, Vaibhav V, Patankar S, Srivastava S. Serum proteome changes in dengue virus infected patients from a dengue endemic area of India: Towards new molecular targets? *OMICS* 2012, *16*(10), 527-536.

43. **Ray S**, Kamath KS, Srivastava R, Raghu D, et al., Serum proteome analysis of vivax malaria: An insight into the disease pathogenesis and host immune response. *J Proteomics*. 2012, 75, 3063-3080.
44. Srivastava R^ψ, **Ray S**^ψ, Vaibhav V, Gollapalli K, et al., Serum profiling of leptospirosis patients to investigate proteomic alterations. *J Proteomics*. 2012, 76, 56-68.
45. Gollapalli K, **Ray S**, Srivastava R, Renu D, et al., Investigation of serum proteome alterations in human glioblastoma multiforme. *Proteomics* 2012, 12(14), 2378-2390.
46. **Ray S**, Koshy NR, Diwakar S, Nair B, Srivastava S. Sakshat Labs: India's virtual proteomics initiative. *PLoS Biol*. 2012, 10(7): e1001353.
47. **Ray S**, Koshy NR, Reddy PJ, Srivastava S. Virtual Labs in Proteomics: New E-Learning Tools. *J Proteomics*. 2012, 75, 2515-2525.
48. Reddy PJ, Sadhu S, **Ray S**, Srivastava S. Cancer biomarker detection by surface plasmon resonance biosensors. *Clin Lab Med*. 2012, 32(1), 47-72.
49. **Ray S**, Reddy PJ, Choudhary S, Raghu D, Srivastava S. Emerging nanoproteomics approaches for disease biomarker detection: A current perspective. *J Proteomics*. 2011, 74, 2660-2681.
50. Kamal SM, Warnich L, Ferguson LR, Srivastava S, **Ray S**, et al., Forward Look: Tenth Anniversary of the Human Genome Sequence and 21st Century Postgenomics Global Health - A Close Up on Africa and Women's Health. *Curr Pharmacogenomics Person Med*. 2011, 9(3), 148-155.
51. **Ray S**, Ray S, D'souza R, Srivastava S. Nanotechniques and proteomics: An integrated platform for diagnostics, targeted therapeutics and personalized medicine. *Curr Pharmacogenomics Person Med*. 2011, 9(4), 264-285.
52. **Ray S**, Reddy PJ, Jain R, Gollapalli K. Moiyadi A, Srivastava S. Proteomic technologies for the identification of disease biomarkers in serum: advances and challenges ahead. *Proteomics* 2011, 11, 2139-2161.
53. **Ray S**, Chandra H, Srivastava S. Nanotechniques in proteomics: current status promises and challenges. *Biosens Bioelectron*. 2010, 25(11), 2389-2401.
54. **Ray S**, Mehta G, Srivastava S. Label-free detection techniques for protein microarrays: prospects, merits and challenges. *Proteomics* 2010, 10(4), 731-748.

B. Preprints [2]

1. Jha PK, Valekunja UK, **Ray S**, Nollet M, Reddy AB. Single-cell transcriptomics and cell-specific proteomics reveals molecular signatures of sleep. bioRxiv 2020, DOI: 10.1101/2020.12.18.423331.
2. Rando HM, MacLean AL, Lee AJ, **Ray S**, Bansal V, et al., Pathogenesis, Symptomatology, and Transmission of SARS-CoV-2 through analysis of Viral Genomics and Structure. arXiv.org 2021, Bibcode: 2021arXiv210201521R (PMID: 33594340).

C. Magazine Editorials [2]

1. **Ray S*** and Srivastava S*. Trends and roadblocks in proteomics research in India. *Nature India* (Special Issue: Proteomics Research in India) 2015, 6-8, doi: 10.1038/nindia.2015.111.
2. **Ray S***, Srivastava S, Nair B, Diwakar S. E-learning resources and virtual labs. *Nature India* (Special Issue: Proteomics Research in India) 2015, 13-14, doi: 10.1038/nindia.2015.114.

D. Book chapters [6]

1. Banerjee S, Das S, Halder N, Bisht S, Talukdar A, **Ray S***. Chronobiological Aspects of Aging, Neurodegeneration, and Inflammation, Book chapter in "*Current Topics in Behavioral Neurosciences*" Springer 2024 (In press).
2. Bhatnagar A, Puppala A, Rankawat S, Ray S, **Ray S***. Role of Circadian Rhythms in Metabolic Syndrome, Book chapter in "*Metabolic Syndrome from Mechanisms to Interventions*" Elsevier 2024, 199-218 (Paperback ISBN: 9780323857321; eBook ISBN: 9780323856584).
3. **Ray S***, Srivastava S, Diwakar S, Nair B, Özdemir V. Delivering on the Promise of Bioeconomy in Developing World: Link it with Social Innovation and Education. In: "*Biomarker Discovery in the Developing World: Dissecting the Pipeline for Meeting the Challenges.*" Springer 2016, DOI: https://doi.org/10.1007/978-81-322-2837-0_6, pp 73-81 (ISBN: 978-81-322-2835-6).
4. **Ray S** and Özdemir V. Angel Philanthropy and Crowdfunding to Accelerate Cancer Research in Developing World. In: "*Biomarker Discovery in the Developing World: Dissecting the Pipeline for Meeting the Challenges.*" Springer 2016, DOI: https://doi.org/10.1007/978-81-322-2837-0_5, pp 65-71 (ISBN: 978-81-322-2835-6).
5. Gupta S, **Ray S**, Talukdar A, Sehgal K, Moiyadi A, Srivastava S. Geographic pervasiveness of cancer: Prospects of novel biomarker and therapeutic research in developing countries using OMICs approaches. In: "*Biomarker Discovery in the Developing World: Dissecting the Pipeline for Meeting the Challenges.*" Springer 2016, DOI: https://doi.org/10.1007/978-81-322-2837-0_2, pp 9-17 (ISBN: 978-81-322-2835-6).
6. Syed P, **Ray S**, Gollapalli K, Srivastava S. Serum proteomics for studying disease pathogenesis and identification of disease biomarkers. In: "*Proteomics: targeted technology, innovations and applications.*" Caister Academic Press 2014, ISBN: 978-1-908230-46-1, pp 1-17 (ISBN: 978-1-908230-46-1).

E. Patents (Granted/filed) [5]

1. Prof. Sanjeeva Srivastava, **Dr. Sandipan Ray**, Dr. Veenita Grover Shah. Label-Free Method for Detection and Quantification of Protein Biomarkers [India-Patent No. 394414 (Granted, Award Date: 07/04/2022)].
2. Prof. Sanjeeva Srivastava, Prof. Swati Patankar, **Mr. Sandipan Ray**, Dr. Urmila Thatte, Dr. Nithya Gogtay, Dr. Durairaj Renu, et al. Protein Biomarkers for *Plasmodium vivax* Malaria [India-Patent No. 336131 (Granted, Award Date: 28/04/2020)].
3. Prof. Sanjeeva Srivastava, Prof. Rajneesh Srivastava, **Mr. Sandipan Ray**, Mr. Vineet Vaibhav. Protein Biomarkers for Leptospirosis [India-Patent No. 336123 (Granted, Award Date: 28/04/2020)].
4. Prof. Sanjeeva Srivastava, Prof. Swati Patankar, **Mr. Sandipan Ray**, Dr. Urmila Thatte, Dr. Nithya Gogtay, Dr. Durairaj Renu, et al. Protein Biomarkers for *Plasmodium falciparum* Malaria [IPA No. 201922050215; Publication Date: 05/12/2019].
5. Prof. Sanjeeva Srivastava, **Dr. Sandipan Ray**, Mr. Vipin Kumar. Method for Detection of Protein Biomarkers for Different Complications of Falciparum Malaria [IPA No. 202021002027; Publication Date: 23/07/2021].

FUNDED RESEARCH PROJECTS

1. **Comprehensive Characterization of the Circadian Regulations of Kinases and Diverse Signaling Pathways**, SERB DST (SRG/2021/000671), 2 years (Dec 2021 – Dec 2023), 28.71 Lakh INR [PI].
2. **Investigation on the Cross-talk among Circadian Aberrations, Sleep Deficiency, Aging, and DNA Damage for Potential Health and Therapeutic Benefits**, ICMR (BMS/Adhoc/184/2022-23), 3 years, (Apr 2023 – Apr 2026), 87.5 Lakh INR [PI].
3. **In-Situ Nano-transformable hydrogel for affordable targeted therapy of highly metastatic cancers**. SOCH - Stimulated Opportunities for Addressing Challenges of Humanity - IIT Hyderabad, 2 years (July 2022 – July 2024), 100 Lakh INR [Co-PI].
4. **Nano-Transformable Hydrogel for Targeted ChemoImmunotherapy of Breast Cancer**, SUPRA – SERB (SPR/2022/000230), 3 years (Jun 2023 – Jun 2026), 79.13 Lakh INR [Co-PI].
5. **Understanding the mechanism of degradation of cytoplasmic DNA containing alkyl-adducts**. SERB DST (CRG/2022/000183), 2 years (Jun 2023 – Jun 2025), 42.10 Lakh INR [Co-PI].
6. **Validation of a translatable chronobiological signature of early relapse in bipolar disorder**. Wellcome Trust (226945/Z/23/Z), 5 years (Approved, yet to start), AUD 4,110,832.00 (22.24 Crore INR) [One of the Chief Investigators, Lead investigator from India in this multi-national project]

CONFERENCE AND INVITED TALKS (SELECTED)

Total Conference/meeting abstracts: 43 [as a presenting author 23; co-author/corresponding author 20].

1. International conference "**Advances in Proteomics Technologies (APT)-2024**", Feb 2024, IIT Bombay (Invited Speaker)
2. **International Symposium on Chronobiology and Mental Health**, March 2023, University of Delhi, (Invited Speaker)
3. **NCBS Annual Talks 2023**, "Patterns in Biology," Jan 2023 (Invited Speaker)
4. **14th Annual Meeting of the Proteomics Society of India and International Conference on Proteins & Proteomics (PSI-ICPP 2022)**, Nov 2022, CSIR-IICB (Invited Speaker)
5. **13th Annual Meeting of Proteomics Society, India**, Oct 2021, CSIR-CCMB (Invited Speaker)
6. **International Conference on Chronobiology 2021**, July 2021, JNCASR-India, UC Davis- USA (Invited Speaker)
7. **Clock Meeting Series - Chronobiology & Sleep Institute**, September 2019, University of Pennsylvania, USA (Invited Speaker)
8. **Human Proteome Organization 17th Annual World Congress**, October 2018, Orlando, Florida, USA (Talk)
9. **EMBO-EMBL Symposium: Biological Oscillators: Design, Mechanism, Function**, June 2018, EMBL Heidelberg, Germany (Talk)
10. **Biomedical Sciences Research Seminar Program**, May 2018, Nottingham Trent University, UK (Invited Speaker)

11. **Indo-UK Symposium on Precision Medicine**, November 2017, IIT Bombay, Mumbai, India (Invited Speaker)
12. **Proteomics Methods Forum Conference**, June 2017, University of Oxford, UK (Talk)
13. **EMBO Young Scientists' Forum 2016**, September 2016, Lisbon, Portugal (Talk)
14. **6th Annual Meeting of Proteomics Society, India and International Proteomics Conference on "Proteomics from Discovery to Function"**, December 2014, IIT Bombay, Mumbai, India (Poster)
15. **6^{3rd} Annual Meeting of American Society of Tropical Medicine and Hygiene**, November 2014, New Orleans, USA (Talk)
16. **1st Western Chapter Conference of Indian Academy of Tropical Parasitology**, December 2013, TN Medical College and BYL Nair Hospital, Mumbai, India (Invited Speaker)
17. **Amrita BioQuest 2013; International Conference on Biotechnology for Innovative Applications**, August 2013, Kerala, India (Talk)
18. **Human Proteome Organization 11th Annual World Congress**, September 2012, Boston, USA (Poster)
19. **US Human Proteome Organization (US-HUPO) 8th Annual Conference - "The Future of Proteomics"**, March 2012, San Francisco, USA (Poster)
20. **International Scientific Meeting- "Recent Developments in Malaria Research"**, December 2010, ICGEB, New Delhi, India (Poster)

PROFESSIONAL ASSOCIATIONS

- Royal Society of Biology (RSB), UK [Elected Member, 2020]
- Institute for Translational Medicine and Therapeutics (ITMAT), University of Pennsylvania, USA [Affiliate Member]
- Human Proteome Organization (HUPO) [Annual Membership-Since 2012]
- US- Human Proteome Organization US-HUPO [Membership-Since 2012]
- Society of Biological Chemists, India (SBC) [Life member]
- Indian Society for Chronobiology (InSC) [Life member]
- Proteomics Society, India (PSI) [Life member]
- American Society of Tropical Medicine and Hygiene (ASTMH) [Annual Membership-2014]
- International Society for Infectious Diseases (ISID)
- American Committee of Molecular, Cellular, and Immuno-parasitology (ACMCIP)
- Biotech Forum, Guha Centre for Genetic Engineering & Biotechnology, University of Calcutta

REVIEWER AND EDITORIAL BOARD MEMBER FOR JOURNALS

- World Neurosurgery (ELSEVIER; ISSN: 1878-8750)
- PLOS One (Public Library of Science; eISSN: 1932-6203)
- Frontiers in Cellular and Infection Microbiology (Frontiers, ISSN: 2235-2988)
- Frontiers in Microbiology (Frontiers, ISSN: 1664-302X)
- Frontiers in Physiology (Frontiers, ISSN: 1664-042X)

- International Immunopharmacology (ELSEVIER; ISSN: 1567-5769)
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