List of Publications

A. Publication During the Calendar year 2022

• Department of Biological Sciences

1. **Aishwarya Agarwal** and **Samrat Mukhopadhyay (2022).** Prion Protein Biology Through the Lens of Liquid-Liquid Phase Separation: Liquid-liquid phase separation of prion protein. ***Journal of Molecular Biology***, *434*(1), 167368. https://doi.org/10.1016/j.jmb.2021.167368

2. **Aishwarya Agarwal, Lisha Arora, Sandeep K. Rai, Anamika Avni,** and **Samrat Mukhopadhyay (2022)**. Spatiotemporal modulations in heterotypic condensates of prion and α-synuclein control phase transitions and amyloid conversion. ***Nature Communications***, *13*(1), 1154. https://doi.org/10.1038/s41467-022-28797-5

3. **Aiswarya Sajeevan, Rakesh Pandian,** and **Shravan Kumar Mishra (2022).** Vectors with a flexible multiple cloning site and modular epitope tags for gene expression studies in Schizosaccharomyces pombe. ***Gene Reports***, *29*(1), 101681. https://doi.org/10.1016/j.genrep.2022.101681

4. **Alok Tiwary, Rahul Babu,** Ruchira Sen, and **Rhitoban Ray choudhury (2022).** Bacterial supergroup-specific “cost” of Wolbachia infections in Nasoniavitripennis. ***Ecology and Evolution,*** *12*(9), 9219. https://doi.org/10.1002/ece3.9219

5. **Amjadudheen Varikka Pulakkal, Anuraag Ghosh,** and **Shravan Kumar Mishra (2022).** Broader roles of the ubiquitin-like protein Hub1 indicated by its yeast two-hybrid interactors. ***MicroPublication Biology***, 35098049, 2022. https://doi.org/10.17912/micropub.biology.000519

6. **Anamika Avni, Aishwarya Agarwal, Sandeep K.Rai, Ashish Joshi, Anuja Walimbe, Swastik G. Pattanashetty**and **Samrat Mukhopadhyay (2022).** Single-droplet vibrational raman spectroscopy illuminates the inner workings of phase-separated biomolecular condensates. ***Biophysical Journal,*** *121*(3), 307-308. https://doi.org/10.1016/j.bpj.2021.11.1216

7. **Anamika Avni, Ashish Joshi, Anuja Walimbe, Swastik G. Pattanashetty,** and **Samrat Mukhopadhyay (2022).** Single-droplet surface-enhanced Raman scattering decodes the molecular determinants of liquid-liquid phase separation. ***Nature Communications***, *13*(1), 4378. https://doi.org/10.1038/s41467-022-32143-0

8. **Anamika Kumari, Anjali Yadav,** and **Indrajit Lahiri (2022).** Transient State Kinetics of Plasmodium falciparum Apicoplast DNA Polymerase Suggests the Involvement of Accessory Factors for Efficient and Accurate DNA Synthesis. ***Biochemistry***, *61*(21), 2319-2333. https://doi.org/10.1021/acs.biochem.2c00446

9. **Anish Kumar Mondal** and **Kausik Chattopadhyay (2022).** Structures and functions of the membrane-damaging pore-forming proteins. ***Advances in Protein Chemistry and Structural Biology,****128*(1), 241-288.https://doi.org/10.1016/bs.apcsb.2021.07.001

10. **Anish Kumar Mondal, Kusum Lata, Mahendra Singh, Shamaita Chatterjee, Aakanksha Chauhan, Sindhoora Puravankara** and **Kausik Chattopadhyay (2022).** Cryo-EM elucidates mechanism of action of bacterial pore-forming toxins. ***Biochimica et Biophysica Acta - Biomembranes,*** *1864*(11), 184013. https://doi.org/10.1016/j.bbamem.2022.184013

11. **Anish Kumar Mondal**, Nayanika Sengupta, **Mahendra Singh**, Rupam Biswas, **Kusum Lata, Indrajit Lahiri**, Somnath Dutta and **Kausik Chattopadhyay (2022).** Glu289 residue in the pore-forming motif of Vibrio cholerae cytolysin is important for efficient β-barrel pore formation. ***Journal of Biological Chemistry,*** *298*(10), 102441. https://doi.org/10.1016/j.jbc.2022.102441

12. **Anupa Majumdar** and **Samrat Mukhopadhyay (2022)**. Excitation energy migration to study protein oligomerization and amyloid formation. ***Biophysical Chemistry***, *281*(1), 106719. https://doi.org/10.1016/j.bpc.2021.106719

13. **Anupa T Anil, Karan Choudhary, Rakesh Pandian, Praver Gupta, Poonam Thakran, Arashdeep Singh,** Monika Sharma**,** and **Shravan Kumar Mishra (2022).** Splicing of branchpoint-distant exons is promoted by Cactin Tls1 and the ubiquitin-fold-activated Sde2. ***Nucleic Acids Research***, *50*(17), 10000-10014. https://doi.org/10.1093/nar/gkac769

14. Apoorva Pandey, **Riya Madan,** and Swati Singh **(2022)**. Immunology to Immunotherapeutics of SARS-CoV-2: Identification of Immunogenic Epitopes for Vaccine Development. ***Current Microbiology,*** *79*(10), 30033. https://doi.org/10.1007/s00284-022-03003-3

15. **Archit Gupta, Ashish Joshi, Samrat Mukhopadhyay,** and **PurnanandaGuptasarma (2022)**. The Escherichia coli nucleoid exists in a liquid-liquid phase separated state which seems to be responsive and tunable towards stresses. ***Biophysical Journal***, *121*(3), 357a. https://doi.org/10.1016/j.bpj.2021.11.971

16. **Arpita Mrigwani, Bhishem Thakur,** Harman Kaur and**PurnanandaGuptasarma (2022)**. Synergistic action of different thermostable esterases in pet degradation: improvement of activity against intermediate degradation products by protein engineering. ***Biophysical Journal,*** *121*(3), 347a-348a. https://doi.org/10.1016/j.bpj.2021.11.1032

17. **Arpita Mrigwani, BhishemThakura,** and **PurnanandaGuptasarma (2022).** Conversion of polyethylene terephthalate into pure terephthalic acid through synergy between a solid-degrading cutinase and a reaction intermediate-hydrolysing carboxylesterase. ***Green Chemistry,*** *24(*17), 6707-6719. https://doi.org/10.1039/d2gc01965e

18. **Arpita Sarkar,** Pallavi kaila Sharma, and **PurnanandaGuptasarma(2022)**. Exploring the novel mechanistic aspects of function of a hyperthermophile two-site exo-amylase-cum-glucanotransferase displaying substrate versatility. ***Biophysical Journal***, *121*(3), 346a. https://doi.org/10.1016/j.bpj.2021.11.1025

19. **Arpita Sharma, Shashi Prakash Yadav, Dwipjyoti Sarma** and **Arunika Mukhopadhaya (2022).** Modulation of host cellular responses by gram-negative

bacterial porins. ***Advances in Protein Chemistry and Structural Biology,*** *128*(1), 35-77. https://doi.org/10.1016/bs.apcsb.2021.09.004

20. **Deeksha Thakur** and **Shashi B. Pandit (2022).** Substrate promiscuity: a continuum feature of enzymes. ***Biophysical Journal,*** *121*(3), 344a. https://doi.org/10.1016/j.bpj.2021.11.1015

21. **Deeksha Thakur** and **Shashi Bhushan Pandit (2022)**. Unusual commonality in active site structural features of substrate promiscuous and specialist enzymes. ***Journal of Structural Biology***, *214*(1), 107835. https://doi.org/10.1016/j.jsb.2022.107835

22. **Deepinder Kaur, Pratima Verma, Mahendra Singh, Arpita Sharma, Kusum Lata, Arunika Mukhopadhaya,** and **Kausik Chattopadhyay (2022).** Pore formation-independent cell death induced by a β-barrel pore-forming toxin. ***FASEB Journal***, *36*(10), 2200788R. https://doi.org/10.1096/fj.202200788R

23. Deepjyoti Kumar Das, Mohammad Adeel Zafar, Sidhanta Nanda, Sanpreet Singh, Taruna Lamba, Hilal Bashir, Pargat Singh, Sudeep Kumar Maurya, Sajid Nadeem, **SharvanSehrawat,**Vijayender Bhalla, and Javed Naim Agrewala**(2022).** Targeting dendritic cells with TLR-2 ligand–coated nanoparticles loaded with Mycobacterium tuberculosis epitope induce antituberculosis immunity. ***Journal of Biological Chemistry***, *298*(12), 102596. https://doi.org/10.1016/j.jbc.2022.102596

24. **Devang Haresh Liya, NithishwerMouroug Anand,** Ashwin Kumar Jainarayanan, **MirudulaElanchezhian, Madhumati Seetharaman, DhanuushBalakannan,** and Arpit Kumar Pradhan **(2022).** Drug repurposing and sequence analysis in S-glycoprotein variants reveals critical signature patterns and destabilization of receptor-binding domain in omicron variant. ***Journal of Biomolecular Structure and Dynamics,*** 2127902. https://doi.org/10.1080/07391102.2022.2127902

25. **Garima Prazapati Ankit Yadav Anoop Ambili Abhilasha Sharma** and **RhitobanRaychoudhury (2022).** Males of the parasitoid wasp Nasoniavitripennis can identify which fly hosts contain females. ***Royal Society Open Science***, *9*(1), 211865. https://doi.org/10.1098/rsos.211865

26. **Garima Prazapati, Ankit Yadav, Anoop Ambili, Abhilasha Sharma** and **RhitobanRaychoudhury (2022)**. Males of the parasitoid wasp, *Nasoniavitripennis* , can identify which fly hosts contain females. ***Royal Society Open Science***, *9*(1). https://doi.org/10.1098/rsos.211865

27. Gaurav Kumar, **Prateek Chawla, Neha Dhiman,** Sanya Chadha, Sheetal Sharma, Kanupriya Sethi, **Mahak Sharma** and Amit Tuli **(2022).** RUFY3 links Arl8b and JIP4-Dynein complexes to regulate lysosome size and positioning. ***Nature Communications,*** *13*(1). https://doi.org/10.21203/rs.3.rs-345822/v1

28. Gaurav Kumar, **Prateek Chawla, Neha Dhiman,** Sanya Chadha, Sheetal Sharma, Kanupriya Sethi, **Mahak Sharma**, and Amit Tuli **(2022).** RUFY3 links Arl8b and JIP4-Dynein complex to regulate lysosome size and positioning. ***Nature Communications***, *13*(1), 1540 .https://doi.org/10.1038/s41467-022-29077-y

29. Gokul G and **Jogender Singh (2022).** Dithiothreitol causes toxicity in C. elegans by modulating the methionine-homocysteine cycle. ***eLife,*** *11*(1), 76021. https://doi.org/10.7554/eLife.76021

30. Janice D. Pata, Y. Whitney Yin and **Indrajit Lahiri (2022).** Editorial: Nucleic Acid Polymerases: The Two-Metal-Ion Mechanism and Beyond**.** ***Frontiers in Molecular Biosciences,****9*(1), 948326. https://doi.org/10.3389/fmolb.2022.948326

31. Jasreen Kaur, **Sharvan Sehrawat,** Ikjot Singh Sohal, Harpreet Singh, Naveen Kumar Gupta, Sanjeev Puri, Dhimiter Bello, and D. Madhu Khatri **(2022).** Toxicity screening and ranking of diverse engineered nanomaterials using established hierarchical testing approaches with a complementary in vivo zebrafish model. ***Environmental Science: Nano***, *9*(8), 2726-2749. https://doi.org/10.1039/d2en00265e

32. Jatin Chadha, Ravi, **Jogender Singh,** Sanjay Chhibber, and Kusum Harjai**(2022).** Gentamicin Augments the Quorum Quenching Potential of Cinnamaldehyde In Vitro and Protects Caenorhabditis elegans From Pseudomonas aeruginosa Infection. ***Frontiers in Cellular and Infection Microbiology,*** *12*(1), 899566. https://doi.org/10.3389/fcimb.2022.899566

33. **Jayati Gera, Prerna Budakoti, Meghna Suhag, Lolitika Mandal** and **Sudip Mandal (2022).** Physiological ROS controls Upd3-dependent modeling of ECM to support cardiac function in Drosophila. ***Science Advances,*** *8*(7). https://doi.org/10.1126/sciadv.abj4991

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35. **Jillella Mallikarjun,** and **J. Gowrishankar(2022)**. Essential Role for an Isoform of Escherichia coli Translation Initiation Factor IF2 in Repair of Two-Ended DNA Double-Strand Breaks. ***Journal of Bacteriology***, *204*(4), 00571-21. https://doi.org/10.1128/jb.00571-21

36. **Jillella Mallikarjun**, L. SaiSree, P. Himabindu, K. Anupama, Manjula Reddy, and **J. Gowrishankar (2022).** Modulation of RecFORQ- and RecA-Mediated Homologous Recombination in Escherichia coli by Isoforms of Translation Initiation Factor IF2. ***Journal of Bacteriology,*** *204*(4), 569-21. http://doi.org/10.1128/jb.00569-21

37. John P. Gillies, Janice M. Reimer, Eva P. Karasmanis**, Indrajit Lahi**ri, Zaw Min Htet, Andres E. Leschziner and Samara L. Reck-Peterson **(2022).** Structural basis for cytoplasmic dynein-1 regulation by Lis1. ***Elife***,*11*(6), 71229.https://doi.org/10.7554/elife.71229

38. **Kajal Gupta, Gaganpreet Kaur, Tejal Pathak,** and **Indranil Banerjee (2022).** Systematic review and meta-analysis of human genetic variants contributing to COVID-19 susceptibility and severity. ***Gene***, *844*(1), 146790. https://doi.org/10.1016/j.gene.2022.146790

39. **Karan Singh, Manas Arun Samant** and **Nagaraj Guru Prasad (2022).** Evolution of cross-tolerance in Drosophila melanogaster as a result of increased resistance to cold stress. ***Scientific Reports,*** *12*(1), 19536. https://doi.org/10.1038/s41598-022-23674-z

40. **KomalaMaggu**, SnehaKaps**e, Neetika Ahlawat, Manasa Geeta Arun,** and **Nagaraj Guru Prasad (2022)**. Finding love: fruit fly males evolving under higher sexual

selection are inherently better at finding receptive females. ***Animal Behaviour***, *187*(1), 15–33. https://doi.org/10.1016/j.anbehav.2022.02.010

41. Kshitish C. Majumdar and **Rajesh Ramachandran(2022).** Aquaculture Productivity Enhancement Through Advanced Technologies. ***Advances in Fisheries Biotechnology,*** 1-28. https://doi.org/10.1007/978-981-16-3215-0_1

42. **Kusum Lata, Mahendra Singh, Shamaita Chatterjee** and **Kausik Chattopadhyay(2022).** Membrane Dynamics and Remodelling in Response to the Action of the Membrane-Damaging Pore-Forming Toxins. ***The Journal of Membrane Biology***, *255*(2-3), 161–173. https://doi.org/10.1007/s00232-022-00227-z

43. **Lisha Arora,** and **Samrat Mukhopadhyay (2022).** Conformational Characteristics and Phase Behavior of Intrinsically Disordered Proteins─Where Physical Chemistry Meets Biology. ***Journal of Physical Chemistry B***, *126*(28), 5137-5139. https://doi.org/10.1021/acs.jpcb.2c04017

44. **Mahendra Singh, N. Rupesh, Shashi Bhushan Pandit,** and**Kausik Chattopadhyay (2022).** Curcumin Inhibits Membrane-Damaging Pore-Forming Function of the β-Barrel Pore-Forming Toxin Vibrio cholerae Cytolysin. ***Frontiers in Microbiology***, *12*(1), 809782. https://doi.org/10.3389/fmicb.2021.809782

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46. Matthieu Pierre Platre, **Santosh B. Satbhai,** Lukas Brent, Matias F. Gleason, Min Cao, Magali Grison, Marie Glavier, Ling Zhang, Christophe Gaillochet, Christian Goeschl, Marco Giovannetti, Balaji Enugutti, Julie Neveu, Marcel von Reth, Ruben Alcázar, Jane E. Parker, Grégory Vert, Emmanuelle Bayer, and Wolfgang Busch **(2022).** The receptor kinase SRF3 coordinates iron-level and flagellin dependent defense and growth responses in plants. ***Nature Communications***, *13*(1), 4445. https://doi.org/10.1038/s41467-022-32167-6

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50. **Nidhi Kumari**, and Lal Chand Rai **(2022)**. Molecular characterization of local cyanobacterial isolates using 16S rRNA rpoB and nif H biomarkers. ***Cyanobacterial Lifestyle and its Applications in Biotechnology***,307-334. https://doi.org/10.1016/B978-0-323-90634-0.00004-4

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52. **Parvathy Ramesh, Sushmit Ghosh,** and**Lolitika Mandal(2022)**. Combination of Immunofluorescence and Quantitative Fluorescence In-situ Hybridization for Analysing Differential Gene Expression in the Niche Cells of the Drosophila Lymph Gland. ***Bio-Protocol***, *12*(2), 4290. https://doi.org/10.21769/bioprotoc.4290

53. **Prachi Ojha, Subhajit Pal** and **Samarjit Bhattacharyya (2022).** Regulation of Metabotropic Glutamate Receptor Internalization and Synaptic AMPA Receptor Endocytosis by the Postsynaptic Protein Norbin. ***The Journal of neuroscience,*** *42*(5), 731–748. https://doi.org/10.1523/JNEUROSCI.1037-21.2021

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55. **Priyanka Dogra, Shruti Arya**, Avinash K Singh, Anindya Datta**,** and **Samrat Mukhopadhyay (2022).** Conformational and Solvation Dynamics of an Amyloidogenic Intrinsically Disordered Domain of a Melanosomal Protein. *The **Journal of Physical Chemistry B***, *126*(2), 443–452. https://doi.org/10.1021/acs.jpcb.1c09304

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58. Rohit Goswami and **Ruhila S. (2022).** High Throughput Reproducible Literate Phylogenetic Analysis. ***PDGC 2022 - 2022 7th International Conference on Parallel Distributed and Grid Computing,*** 337-340. https://doi.org/10.1109/PDGC56933.2022.10053210

59. Rohit Goswami, **Ruhila S**., Amrita Goswami, Sonaly Goswami, and Debabrata Goswami **(2022).** Reproducible High Performance Computing without Redundancy with Nix. ***PDGC 2022 - 2022 7th International Conference on Parallel Distributed and Grid Computing***, 238-242. https://doi.org/10.1109/PDGC56933.2022.10053342

60. **Rohit Kapila, Soumyadip Poddar, Neeraj Meena,** and **Nagaraj Guru Prasad (2022).** Investment in adult reproductive tissues is affected by larval growth conditions but not by evolution under poor larval growth conditions in Drosophila

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