

Dr. Arindam Bakshi

Designation: Assistant Professor

Post Graduate Department of Biotechnology,
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Qualifications

- B. Sc (Microbiology Hons.), Scottish Church College, University of Calcutta (2006-2009)
- M. Sc. (Plant Molecular Biology and Biotechnology), Bose Institute, University of Calcutta (2009-2011)
- Ph. D. (Biochemistry), Indian Institute of Science, Bangalore, (2011-2018)
- Qualified NET (CSIR-JRF), (2010), GATE (2010)

Research experience

- Postdoctoral Research Fellow in National Centre for Biological Sciences, Bangalore (May 2019-July 2019)
- Postdoctoral Research Fellow in Iowa State University, USA (March 2020-Oct 2021)

Areas of Interest

Primary area of Research interests: Molecular Plant Virology

- Structure-function relationship of plant viral proteins and domains in viral replication, genome encapsidation and cell to cell movement.
- Functional characterization of plant viral RNA dependent RNA polymerase (RdRp) in vitro and in vivo
- Use of proteomic approaches to identify interaction partners of viral RdRp and novel host factors in viral replication.

Additional area of Research interest

- Structural studies of Plant viral RdRp and its complexes using X-ray crystallography and cryo-electron microscopy
- Engineering of plant viral coat proteins as nano particles (VNPs) or virus like particles (VLPs) for intracellular delivery of therapeutic antibodies
- Subcellular localization of antibody tagged VNPs/VLPs inside mammalian cells and elucidation of biochemical pathways involved in antibody delivery

Publications/Book Chapters

1. Govind, K., **Bakshi, A.**, Savithri, H.S., 2014. Interaction of Sesbania mosaic virus (SeMV) RNA-dependent RNA polymerase (RdRp) with the p10 domain of polyprotein 2a and its implications in SeMV replication. FEBS open bio 4, 362-369.
2. **Bakshi, A.**, Vishnu Vardhan, G.P., Hema, M., Murthy, M.R.N., Savithri, H.S., 2017. Structural and Functional Characterization of Sesbania Mosaic Virus, in: Mandal, B., Rao, G.P., Baranwal, V.K., Jain, R.K. (Eds.), A century of Plant Virology in India. Springer Singapore, Singapore, pp. 405-427. DOI: 10.1007/978-981-10-5672-7_18.

3. **Bakshi, A.**, Sridhar, S., Sistla, S., Savithri, H.S., 2019. Interaction of the intrinsically disordered C-terminal domain of the sesbania mosaic virus RNA-dependent RNA polymerase with the viral protein P10 in vitro: modulation of the oligomeric state and polymerase activity. Archives of virology 164, 971-982. <https://doi.org/10.1007/s00705-019-04163-7>.
4. **Bakshi, A.**, Savithri, H.S., 2019. Functional insights into the role of C-terminal disordered domain of Sesbania mosaic virus RNA dependent RNA polymerase and the coat protein in viral replication in vivo. Virus Research 267, 26-35. <https://doi.org/10.1016/j.virusres.2019.05.003>.
5. Dev, B., **A. Bakshi** and B. Paramasivan (2022). "Prospects of utilizing seawater as a reaction medium for pretreatment and saccharification of rice straw." Chemosphere 293: 133528.
6. Wijeratne, S., **Bakshi, A.**, Talbert, J. (2022). Comparative Analysis of NanoLuc Luciferase and Alkaline Phosphatase Luminescence Reporter Systems for Phage-Based Detection of Bacteria. Bioengineering 9, 479. <https://doi.org/10.3390/bioengineering9090479>.

Conferences attended/poster presentations

International Conference attended (outside India):

1. Presented poster entitled "Role of C terminal disordered domain of Sesbania mosaic virus RNA dependent RNA polymerase in the modulation of its activity and oligomeric status" in the 29th Annual Symposium of The Protein Society held at Fira De Barcelona – Mont Juic, Barcelona, Spain in July 22-25, 2015.

Conference Proceedings:

Bakshi, A., Sridhar, S., Sistla, S., Savithri, H.S., 2015. Role of C terminal disordered domain of Sesbania mosaic virus RNA dependent RNA polymerase in the modulation of its activity and oligomeric status (Conference paper). Protein Science; 29th Annual Symposium of the Protein Society, Volume: 24, Article PF-001.

International Conference attended (within India):

1. Participated in the symposium on "New Horizons in Biology" held in the Department of Biochemistry, IISc, Bangalore on June 16th-17th, 2016.
2. Presented poster entitled "Role of protein-protein interactions in functional regulation of the activity of *Sesbania mosaic virus* RNA dependent RNA polymerase *in vitro*" in the Frontiers of Molecular Biology Conference held in Indian institute of Sciences, Bangalore (2013).

Membership of Scientific Societies

Graduate student member of the Protein Society (<https://www.proteinsociety.org/>).