



Raja Bhattacharya, Ph.D.
Associate Professor & Ramalingaswami Fellow
Amity Institute of Biotechnology
Amity University Kolkata

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Specialization: Neuromodulation of neural circuits & animal behavior

Education & Training:

Ph.D. University of Calcutta, 2007

M.Sc. University of Calcutta, Physiology, 2000

B.Sc. Presidency College, Kolkata, Physiology (Hons.), Chemistry and Zoology, 1998.

After obtaining his Ph.D. degree, Dr. Raja Bhattacharya pursued his postdoctoral research in neurobiology with the model organism *Caenorhabditis elegans*, first at Albert Einstein College of Medicine, New York and later moved to University of Massachusetts, Worcester, USA for a second. He joined Amity Institute of Biotechnology, Amity University Kolkata (2018) after receiving the prestigious Ramalingaswami Fellowship.

Research Interest: His research interests are directed to understand how environmental conditions and internal state of animals modify neural circuits to alter behavior. He utilizes a combined approach, integrating behavioral genetics with cell-specific neuronal ablation and optogenetic techniques to study this problem in the genetically tractable model organism *C. elegans*. Long-term goal of his research include identification and characterization of conserved signaling mechanisms underlying adaptive behaviors and their development as therapeutic targets in neurodegenerative diseases.

Current Research Projects

1. DBT-Ramalingaswami Fellowship funded research project entitled "Identification and characterization of a conserved signaling pathway regulating feeding behavior: implications for obesity"
2. DST-SERB funded Core Research Grant entitled "Interrogating a conserved Somatostatin-like peptidergic signaling system in *C. elegans*: implications for Major Depressive Disorder pathophysiology"

Fellowships, Honors & Awards

- 1) Recipient of National Scholarship, Govt. of India (1998-2000)
- 2) Recipient of Junior/Senior Research Fellowship, CSIR-NET, Govt. of India (2001-2006)
- 3) Qualified for admission to Post-graduate program in Engineering (GATE)
- 4) Qualified for the State level Eligibility Test for lectureship, West Bengal College Service Commission.
- 5) Selected as Senior Research Associate (Scientists' Pool Scheme) CSIR, Govt. of India (April, 2017)
- 6) Awarded Ramalingaswami re-entry fellowship of the Department of Biotechnology, Ministry of Science and Technology, Govt. of India (November, 2017)

Selected Publications

Banerjee N, **Bhattacharya R**, Gorczyca M, Collins K and Francis MM. Local neuropeptide signaling modulates serotonergic activity to shape the temporal organization of *C. elegans* egg-laying behavior. (PLoS Genet. 2017 Apr 6;13(4):e1006697. doi: 10.1371).

Raja Bhattacharya and Michael M. Francis. In the proper context: Neuropeptide regulation of behavioral transitions during food searching. (Worm 2015 June 1; 4(3): e1062971).

Bhattacharya R, Touroutine D, Barbagallo B, Climer J, Lambert CM, Clark CM, Alkema MJ, Francis MM.. A conserved dopamine-cholecystokinin signaling pathway shapes context-dependent *C. elegans* behavior (PLoS Genet. 2014 Aug 28; 10(8):e1004584. doi: 10.1371).

Mondal A, **Bhattacharya R**, Ganguly T, Mukhopadhyay S, Basu A, Basak S, Chattopadhyay D. Elucidation of functional domains of Chandipura virus Nucleocapsid protein involved in oligomerization and RNA binding: implication in viral genome encapsidation. Virology. 2010 Nov 10;407(1):33-42. Epub 2010 Aug 21.

Bhattacharya R, Townley R.T., Berry K.T. and Bülow Hannes. The PAPS Transporter PST-1 is required for heparan sulfation and is essential for viability and neural development. (J Cell Sci. 2009 Dec 15; 122(Pt 24):4492-504). (Featured article).

Bhattacharya R, Basak S, Chattopadhyay DJ. Initiation of encapsidation as evidenced by deoxycholate-treated Nucleocapsid protein in the Chandipura virus life cycle. Virology. 2006 May 25; 349(1): 197-211.