**Ridita Ray Basunia**

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# Academics

2018 – 2023 Integrated BS-MS, Indian Association for The Cultivation of Sciences, 8.17/10

2017 – 2018 Percentage in Higher Secondary: 77.8%

2015 – 2016 CGPA in Secondary: 9.6/10

# Education

2018 – 2023 BS-MS, (Biology), Indian Association for the Cultivation of Science, India

2018 High School Diploma, Kendriya Vidyalaya Berhampore, India

# Research summary, master’s project

The objective of my Master’s project is to localize and study the role of ATGL (Adipose Triglyceride Lipase,

lipase that breaks down Triglyceride to Diglyceride) in lipid metabolism in Zebrafish embryos during the early

developmental stages. It is based on a previous observation of lipase mediated shape fluctuation of Lipid

Droplets (LDs) in Zebrafish embryos, signifying that lipases generate enough mechanical stress on the LDs

to regulate their shape fluctuation, as described in more detail here: Open Biol. 7: 170063. The hypothesis

behind the project is that ATGL is bound dynamically on the LD’s surface, resulting in two different states of

the LDs: active and inactive and has an important role in LD metabolism. To examine this, we are employing

the following strategies: i) using CRISPR-Cas9 gene editing method to tag Zebrafish ATGL with GFP and ii)

overexpression of ATGL-GFP in Zebrafish embryo using Gibson-assembly.

**Projects and Lab Experience**

* Comparing Bird Diversity in a Temporal and Spatial Scale
* Osaka University, Japan summer project Programme
* Studied the influence of urbanization on Gray Langurs virtually (using videos)
* Regulation of Lipid metabolism

Supervisor: Prof. Deepak Kumar Sinha, IACS Kolkata (Professor, School of Biological Sciences, IACS)

* Regulation of blebbing and lamellipodia by non-muscle myosin II activity

Supervisor: Prof. Siddhartha Sankar Jana (Senior Professor, School of Biological Sciences, IACS)

Email: [bcssj@iacs.res.in](mailto:bcssj@iacs.res.in)

* Role of matriptase in monocyte to macrophage differentiation

Supervisor: Prof. Prosenjit Sen (Professor, School of Biological Sciences, IACS)

Email: [bcps@iacs.res.in](mailto:bcps@iacs.res.in)

* Host nutrient extraction (HNE) in context of enteropathogenic E. coli (EPEC)

Supervisor: Prof. Ritesh Ranjan Pal (Assistant Professor, School of Biological Sciences, IACS)

Email: [ritesh.pal@iacs.res.in](mailto:ritesh.pal@iacs.res.in)

* Regulation of sleep by glial genes in Drosophila

Supervisor: Prof. Alex Keene (Professor, Department of Biology, Texas A&M University)

**Skills**

**Lab Skills:** Gibson Assembly, Primer Designing, Plasmid Purification, RNA Extraction, PCR, Immunoprecipitation, Protein Isolation, Bradford Assay, Western Blot and other Molecular Biology Techniques, experienced in Zebrafish Husbandry, Bacterial and Mammalian Cell Culture

**Equipment:** Optical Microscopy (Confocal and Epifluorescence), Microinjection, Flow Cytometry

**Software Knowledge:** Image processing with Fiji (ImageJ), Origin Pro, SnapGene Viewer, R studio