# Dr. Tandrika Chattopadhyay


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| Address: | 227, Tagore Park<br>Delhi-110009 |
| Email address: | tandrikac@drils.org |
| Designation: | Associate Principle Research Scientist |
| Department/Institute: | Center for Innovation in Molecular and Pharmaceutical Sciences (CIMPS)<br>Dr Reddy's Institute of Life Sciences<br>University of Hyderabad Campus, Gachibowli<br>Hyderabad-500042, India |
| Post-Doctoral Experience: | June, 2019 – April, 2022<br>Post-Doctoral Fellow, Prof Sanjeev Galande, IISER, Pune<br>Feb-2015 – Feb-2019<br>Visiting Fellow, Prof Ullas Kolthur-Seetharam, TIFR, Mumbai |


## Educational Qualifications:

| Degree | University/Institute | Subjects | Duration | Division |
|---|---|---|---|---|
| Ph.D. | National Institute of Immunology New Delhi, India | Physiology and Metabolism | 2007-13 | -- |
| M.Sc | Dept. of Biochemistry<br>University of Delhi South Campus | Biochemistry | 2005-07 | First Division |
| B.Sc (Honours) | Sri Venkateswara College<br>University of Delhi | Biochemistry | 2002-05 | First Division |

## Publications:

- Ganguly S*, **Chattopadhyay T***, Kazi R, Das S, Malik B, Ml U, Iyer PS, Kashiv M, Singh A, Ghadge A, Nair SD, Sonawane MS, Kolthur-Seetharam U. Consumption of sucrose-water rewires macronutrient uptake and utilization mechanisms in a tissue specific manner. J Nutr Biochem. 2025 Jan 29:109850. **(*Equal contribution)** (Impact Factor – 4.8)

- **Chattopadhyay T**, Maniyadath B, Bagul HP, Chakraborty A, Shukla N, Budnar S, Rajendran A, Shukla A, S. Kamat S, Kolthur-Seetharam U. Spatiotemporal gating of SIRT1 functions by O-GlcNAcylation is essential for liver metabolic switching and prevents hyperglycemia. **Proc Natl Acad Sci U S A. 2020** Mar 24;117(12):6890-6900. (Impact Factor – 11.2)

- Maniyadath B*, **Chattopadhyay T***, Verma S, Kumari S, Kulkarni P, Banerjee K, Lazarus A, Kokane SS, Shetty T, Anamika K, Kolthur-Seetharam U. Loss of Hepatic Oscillatory Fed microRNAs Abrogates Refed Transition and Causes Liver Dysfunctions. **Cell Rep. 2019** Feb 19;26(8):2212-2226.e7. **(*Equal contribution)** (Impact Factor – 9.42)

- Deota S*, **Chattopadhyay T***, Ramachandran D, Armstrong E, Camacho B, Maniyadath B, Fulzele A, Gonzalez-de-Peredo A, Denu JM, Kolthur-Seetharam U. Identification of a tissue-restricted isoform of SIRT1 defines a regulatory domain that encodes specificity. **Cell Rep. 2017** Mar 28;18(13):3069-3077. **(*Equal contribution)** (Impact Factor – 9.42)

- **Chattopadhyay T**, Singh RR, Gupta S, Surolia A. Bone Morphogenetic Protein-7 (BMP-7) augments insulin sensitivity in mice with Type-II diabetes mellitus by potentiating PI3K/AKT pathway. **Biofactors. 2017** Mar;43(2):195-209. (Impact Factor – 6.113)

- Gupta S, **Chattopadhyay T**, Pal Singh M, Surolia A. Supramolecular insulin assembly II for a sustained treatment of type 1 diabetes mellitus. **Proc Natl Acad Sci U S A. 2010** Jul 27;107(30):13246-51. (Impact Factor – 11.2)

## Patents:

**"Compositions useful for the treatment of diabetes and other chronic disorder"** (WO/2009/125423)

- Indian Patent Application no: 914/DEL/2008
- Granted in US, **Patent No: 8,426,362**
- Granted in Republic of South Africa, **Patent No: 2009/02374** (Granted December 30, 2009)
- Granted by the European Patent Office.

## Extramural Grants:

1. **SERB-SRG:** Investigating the role of nutrient dependent O-linked Glycosylation of SIRT6 in regulating hepatic functions and physiology (31 lakhs, 2024-26)

### Journal Responsibility:

- Journal of Biosciences
- FASEB Journal
- I SCIENCE
- RSC Advances

## Teaching Experience:

Molecular physiology course coordinator for masters and PhD students including Metabolic regulation of gene expression, nutrient dependent cellular signaling, Hormonal and peptide based endocrine regulation of organ physiology and role of inter-tissue communication on whole body energy homeostasis.

Research into the fundamental principles of organismal physiology has been at the forefront of my projects during both my PhD and Post-Doctoral tenure. This has enabled my knowledge in the area of how molecular and cellular processes give rise to complex physiologic functions, ranging from metabolic regulation of gene expression to cell, tissue and whole organism communication. I also have theoretical and practical experience in teaching Masters and early PhD students' mammalian molecular physiology and in vivo analysis of the endocrine system, hepatic physiology and inter-tissue communication that govern whole body metabolism during physio/-pathophysiological states. I also have expertise in areas ranging from molecular physiology, biochemistry, cell/molecular biology and translation research with interests in metabolomics, glycomics, and genome-wide association studies relevant in lifestyle diseases such as diabetes, NAFLD, CVDs and aging.

## RESEARCH EXPERIENCE

**1. February 2015-February 2019 (Visiting Fellow)**

Institution: **Tata Institute of Fundamental Research, Mumbai**
Advisor: **Dr Ullas Kolthur-Seetharam**
Encoding specificity and temporal regulation in pleiotropic factors involved in metabolic homeostasis

**2. July 2012-December 2014 (Research Associate)**

Institution: **National Institute of Immunology, New Delhi.**
Advisor: **Dr. Sarika Gupta (NII);** Co-Advisor: **Prof. A. Surolia (IISc, Bangalore)**
Characterization of cytotoxic intermediates and deciphering the underlying mechanism of cell toxicity in transthyretin related amyloidosis.

**3. July 2007- 2012 (PhD project)**

Institution: **National Institute of Immunology, New Delhi.**
Advisor: **Prof. A. Surolia (IISc, Bangalore);** Co-Advisor: **Dr. Sarika Gupta (NII)**
Ph.D. Thesis title: ***"Supramolecular insulin assembly-II (SIA-II) as a therapy for Diabetes Mellitus and maintenance of Glucose homeostasis by bone morphogenetic proteins."***

**4. December 2006 – March 2007 (MS thesis project-II)**

Institution: **Department of Biochemistry, University of Delhi South Campus, New Delhi**
Advisor: **Prof. Vijay K Chaudhary**

**5. July 2006 – November 2006 (MS Yhesis Project-I)**

Institution: **Department of Biochemistry, University of Delhi South Campus, New Delhi**
Advisor: **Prof. Prahlad C. Ghosh**

**6. May 2006 – July 2006 (Summer Training)**

Institution: **National Centre for Biological Sciences**
Mentor: **Dr Satyajit Mayor**

## Awards:

- SERB Travel Fellowship (2017)
- Keystone Scholarship (2017)
- Inspire fellowship (2015)
- JNCASR Summer Research Fellowship (2006)

## Symposiums Attended:

- International Conference on Emerging Trends in Cancer Research, School of Life Sciences, J.N.U, 2003
- Cell Cycle and its Regulation by Tim Hunt, South Campus, Delhi University, 2003
- Translational repression of microRNA's in human cells, Delhi University, 2006.
- Malaria pathogenicity factor and cell signaling mechanisms, South Campus, Delhi University, 2007
- International Symposium on Cancer, NII, 2007
- Advances in Single-Molecule Research for Biology & Nanoscience, XII Annual Linz Winter Workshop, Austria, 2010
- Indo-US Bilateral Symposium on Aging and Age-Related Diseases, Delhi, 2011
- Epigenetic Mechanisms of Male Germ Cell Maturation and Early Development, CEFIPRA, Mumbai, 2017
- Keystone Conference, Aging and Mechanisms of Aging-Related Disease, Japan, 2017
- Indo-Japan conference on Epigenetics and Human Disease, Kolkata, 2018
- Nutrition, 2020 (Online symposium), American Society for Nutrition, 2020
- Integrating Metabolism and Immunity, Keystone Symposium (virtual), 2021
- ARUMDA symposium, Hyderabad, India (2023)
- Metabolic and Molecular Mechanisms of NAFLD/NASH, Keystone Symposium, 2023
- ARUMDA symposium, Hyderabad, India (2024)