Tultul Saha, Ph.D.

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Professional Summary

Dynamic and passionate researcher with expertise in intestinal organoid culture, stem cell biology, and molecular biology methods. Experienced in grant writing, collaborative research, and protocol development, contributing to therapeutic strategies for inflammatory bowel disease linked to neurodegenerative diseases.

Skills

• Cell culture techniques
• Molecular biology methods
• Intestinal organoid and enteric neuronal cell culture
• Electrophysiology (Multi electrode array (MEA) and Ussing chamber)
• Immunohistochemistry, confocal microscopy, and image processing
• Grant and project report writing
• Multidisciplinary and multi-national project management
• Protocol development and SOPs management
• Software: Origin 6.0, ImageJ
• Data management

Professional Experience

- Postdoctoral Researcher – Hochschule Kaiserslautern, Germany. Mar 2024 – Present
  - European Commission funded project on TR1 regulatory T cells for inflammatory bowel disease (IBD) (MiTi2).
  - Presented research progress in annual project meetings, conferences.
  - Developed complex organoid preparation protocols from patient-derived tissues.
  - Contributed to grant proposals and mentored junior researchers.

- Postdoctoral Research Associate – University of Arizona, USA. Oct 2021 – Nov 2022
  - NIH-funded project on NHE3 protein in ECM adhesion and colorectal cancer.
  - Established protocols for human/mouse colonoid and 2D organoid culture.
  - Studied PARylation in IBD.

- Research Employee – University of Regensburg, Germany. Jan 2021 – May 2021
  - DFG-funded study on chloride channels and Paneth cell secretion.
  - Developed organoids from Anoctamin1 knockout mice for functional analysis.

- Project Fellow – CSIR-Indian Institute of Chemical Biology, Kolkata, India Jul 2013 – Mar 2014
  -Real-time granule secretion assays using organoids and receptor agonists.

- Project Assistant – National Institute of Biomedical Genomics, Kalyani, India Dec 2012 – Jun 2013
  - Ochratoxin-A detection via dot-blot ELISA.
  - DNA/RNA isolation from cervical cancer biopsies and SNP profiling.

Education and Credentials

Ph.D. in Biochemistry, University of Calcutta, India (2014 – 2020, awarded on 25th April,2022)

Thesis: "Identification and Characterization of an Anoctamin Channel Modulator: Effect on Intestinal Ion Transport for the Treatment of Gastrointestinal Disorders". This study was involved in identifying a terpenoid from *C. sativus* which showed activation of TMEM16A (chloride channel) mediated current in the intestinal epithelial cell, which has a great significance to ameliorate fluid secretion defect observed in intestinal obstructive diseases. In this study I have also demonstrated the interaction of Anoctamin1 channel with NHERF1 (Na+/H+ exchanger regulatory factor 1, which is a scaffolding protein), that helps in the stabilization of Anoctamin1 protein on the apical microvilli domain.

M.Sc. in Biochemistry, University of Calcutta, India (2010 – 2012)

Dissertation: Association of promoter polymorphism of Matrix Metalloproteinase-7 and its expression in epithelial ovarian cancer.

B.Sc. in Microbiology, Dinabandhu Andrews College, University of Calcutta (2007 – 2010)

Honors and Awards

- Best Basic Science Abstract Award: NeuroGASTRO 2025, Queen Mary University, London, UK.
- National eligibility test (NET), 2013 – UGC Rank: 67
- GATE, 2013 – All India Rank: 201

Conferences

- Poster presentation at ENS conference 2026, Leuven, Belgium (upcoming in April, 2026).
- Oral presentation at CRS- BioBarriers meeting, 2026, Saarbrücken University, Germany.
- Oral presentation delivered at the plenary session of the NeuroGASTRO 2025 meeting, London, September 4–9.
- Poster presentation at "Oridarmi: a Carl Zeiss funded project" symposium organized by the University of Kaiserslautern, Germany, March 21, 2025.
- Oral presentation at the MITI2 general assembly meeting, Paris, April 29-30.
- Poster presentation at Digestive Disease Week (DDW), Chicago, May 6-9, 2023, on "Inhibition of NHE3 mediates increased proliferation and migration of colonic epithelial cells".
- Poster presentation at the Experimental Biology (EB) meeting in 2016 on "Identification of ANO1 (TMEM16A) Activator Purified from Cucumis sativas: Its Role for the Treatment of Cystic Fibrosis and Gastrointestinal Disorders"

- Oral presentation at the 103rd Indian Science Congress in 2016, organized by the University of Mysore, India.

Publications (best 5)

ORCID: https://orcid.org/0000-0002-7913-9640

1.Claudio Bernardazzi*, **Tultul Saha***, Michael A Gurney, Daniel Laubitz, Pujarini Dutta Dey, Tarek Masannat, Irshad Ali Sheikh, Monica T Midura-Kiela, Fayez K Ghishan, Pawel R Kiela. (2025) NHE3 Controls Proliferation and Migration of Colonic Epithelial Cells. Inflamm Bowel Dis2025 Feb 17:izaf024. doi: 10.1093/ibd/izaf024. PMID: 39960764. *co-first authors. IF: 7.29

2.**Tultul Saha**, Joydeep Aoun, Paramita Sarkar, Andrea J. Bourdelais, Daniel G. Baden, Normand Leblanc, John M. Hamlyn, Owen M. Woodward, Kazi Mirajul Hoque. (2021) Cucumis sativus extract elicits chloride secretion by stimulation of the intestinal TMEM16A ion channel. Pharm Biol. 2021; 59(1): 1006–1013. doi: 10.1080/13880209.2021.1949357. PMCID: PMC8354179. IF: 3.9

3.**Tultul Saha**, Joydeep Aoun, Mikio Hayashi, Sheikh Irshad Ali, Paramita Sarkar, Prasanta Kumar Bag, Normand Leblanc, Nadia Ameen, Owen M Woodward, Kazi Mirajul Hoque. (2021) Intestinal TMEM16A control luminal chloride secretion in a NHERF1 dependent manner. Biochem Biophys Rep. 2021 Jan 22;25:100912. doi: 10.1016/j.bbrep.2021.100912. PMCID: PMC7838733. IF: 2.55

4.Tanaya Chatterjee, **Tultul Saha**, Paramita Sarkar, Kazi Mirajul Hoque, Barun K Chatterjee, Pinak Chakrabarti. (2021) The gold nanoparticle reduces Vibrio cholerae pathogenesis by inhibition of biofilm formation and disruption of the production and structure of cholera toxin. Colloids Surf B Biointerfaces 2021 Aug:204:111811. doi: 10.1016/j.colsurfb.2021.111811. PMID: 33965751. IF: 5.4

5. Paramita Sarkar, **Tultul Saha**, Irshad Ali Sheikh, Subhra Chakraborty, Joydeep Aoun, Manoj Kumar Chakrabarti, Vazhaikkurichi M Rajendran, Nadia A Ameen, Shanta Dutta, Kazi Mirajul Hoque. (2018) Zinc ameliorates intestinal barrier dysfunctions in shigellosis by reinstating claudin-2 and -4 on the membranes. Am J Physiol Gastrointest Liver Physiol. 2018 Nov 8;316(2):G229–G246. doi: 10.1152/ajpgi.00092.2018. PMCID: PMC6397338. IF: 3.9.

Declaration

I hereby declare that the information provided above is true to the best of my knowledge.

Place: Zweibrucken. Germany