

## PAYAL S. MATE

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### PROFILE SUMMARY

Molecular biologist with PhD in Animal Biochemistry with 4+ years of experience in **molecular techniques, cell culture, *in vivo* models**, and skilled in **analyzing high throughput data**. Optimized laboratory protocols ensuring reliable assay performance and **automated data analysis** using Shell scripting for translational research applications. Strong background in translational research, scientific communication, and mentoring, with a track record of peer-reviewed publications. Passionate about applying computational and experimental approaches to advance **molecular** diagnostics.

### TECHNICAL EXPERTISE

- **Molecular Techniques:** qRT PCR, Western blot, ELISA, Immunocytochemistry, Confocal Microscopy.
- **Cell & Animal Models:** Mammalian cell culture (Hepa 1-6, HepG2), animal handling, sample collection and processing (blood, urine, tissues) for biochemical and multi-omics analysis
- **Computational & Data Analysis:** R programming, Python, Linux, Shell scripting, NGS and single-cell RNA sequencing analysis, GraphPad Prism, ImageJ, Data interpretation
- **Workflow & Lab Management:** SOP development, Workflow optimization
- **Additional skills:** Critical thinking, attention to detail, communication, Microsoft office

### RESEARCH EXPERIENCE

#### Intern – Eminent Biosciences, India

April 2025- Present

- Conducting computational analyses of **transcriptomics datasets** to investigate molecular pathways involved in cancer using R and Python based packages.
- Analyzing high-throughput genomics data to identify key genes and pathways driving tumorigenesis.

#### PhD Researcher- National Dairy Research Institute, Karnal, India

Aug 2019-Aug 2025

- **qRT-PCR and immunohistochemistry** revealed expression of AQPs in buffalo liver and adipose tissue, where AQP9 was significantly upregulated during heat stress.
- Studied oxidative stress markers, in response to adaptation to climate in large animals and found **catalase activity** was significantly increased in heat stress.
- **Established steatosis model** in Hepa 1-6 cell to study the effect of phytochemicals on AQP expression and lipid accumulation and pre-treatment with zingerone led to significant decrease in AQP9 expression.
- Designed and executed animal studies to investigate metabolic diseases ensuring full compliance with institutional ethics committee.
- **Developed and maintained SOPs** and experimental protocols for molecular biology ensuring reproducibility and regulatory compliance.
- Coordinated interdisciplinary research teams, managed project timelines, and mentored fellow lab researchers.

- Prepared manuscripts, posters, and conference presentations, contributing to peer-reviewed publications in molecular diagnostics, genomics, and translational medicine.

## SELECTED PUBLICATIONS

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- **Payal S. Mate**, Fathima Jasmin A. T., Anju Nagpal, Suneel Kumar Onteru, Ashutosh, Sunita Meena “[Expression and Immunolocalization of Aquaporins in the Buffalo Liver and Adipose Tissue](#),” (**Journal of molecular histology**, 2025)
- Shiveeli Rajput, Devika Gautam, Ashutosh Vats, Mayank Roshan, Priyanka Goyal, Chanchal Rana, **Payal S. Mate**, Ashutosh Ludri, Sachinandan De “[Aquaporin \(AQP\) gene family in Buffalo and Goat: Molecular characterization and their expression analysis](#)” (**International Journal of Biological Macromolecules**, 2024)
- **Payal S. Mate, Fathima Jasmin A. T., Ashutosh, Sunita Meena** “Effect of the Seasons on the Expression of Aquaporins in the Bovine Liver and Adipose Tissue” (under review)
- Anjali Jaglan, Gunjan Sadera, Anju Nagpal, **Payal S. Mate**, Sudarshan Kumar, Gunjan Goel “Protective effects of probiotic mediated digested gliadin and 33-mer peptide in Caco-2 cell cultures” (under review)
- **Payal S. Mate**, Fathima Jasmin A. T., Suman Rani, Ashutosh, Sunita Meena “Role of Zingerone in Modulating Aquaporin 9 (AQP9): Implications for Fatty Liver Disease” (under review)

## EDUCATION

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- **Ph.D.** in Animal biochemistry (First division) (2025)  
National Dairy Research Institute, Karnal, India.
- **M.Sc.** in Biochemistry (First division) (2019)  
G. B. Pant University of Agriculture and Technology, Pantnagar, India.

## AWARDS/ FELLOWSHIPS

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- Received Best Scientific Story by **AWSAR-DST** (Government of India), (2023) link: [https://payalsmate.github.io/publication/article/awsar\\_story.pdf](https://payalsmate.github.io/publication/article/awsar_story.pdf)
- Received the prestigious DBT fellowship (Government of India) for serving as **Junior Research Fellow** (2020–2022) and **Senior Research Fellow** (2023–2025) during Ph.D.
- Qualified **ICMR-JRF** examination by the Indian Council of Medical Research (2020)
- Qualified **CSIR-UGC**, Council of Scientific and Industrial Research, India (2018)
- Received **National Talent Scholarship (NTS)** during Master’s degree (2017-2019).

## CONFERENCES & WORKSHOPS

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- Attended 3<sup>rd</sup> Healthy Longevity Symposium organized by Khalifa University in collaboration with Nature Conferences 2025, Abu Dhabi.
- Attended 1<sup>st</sup> MENA Congress for Clinical and Translational Research 2025, Abu Dhabi.
- Presented poster at the 2024 International Conference, Proteomics Society of India.
- Best Paper Presentation Award, AAVASILES International Conference, 2022.
- Poster Presentation Award, Society of Biological Chemists (India) Symposium, 2018.
- Presented research project at AVISHKAR, Inter-University Research Convention, 2017.
- Completed experimental training in Next-Generation Sequencing (NGS).
- Gained practical experience in molecular docking and protein modeling.

## TEACHING EXPERIENCE

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Mentored undergraduate students (2022–23) at NDRI, Karnal, training them in biochemical techniques emphasizing structured thinking, problem-solving and scientific communication skills.