

PAYAL SANJAYRAO MATE

 Phone: +91-8412084103

 Email: payal041996@gmail.com

 [Personal webpage](#)

I am a researcher with research expertise in Bioinformatics and Molecular Biology with experience in both computational analysis and wet lab research. Working in genomics, transcriptomics, and proteomics, with a focus on uncovering disease mechanisms and therapeutic targets. Proficient in high-throughput data analysis and molecular biology techniques.

TECHNICAL SKILLS

Computational Techniques & Tools

- RNA-Seq (DESeq2, edgeR, Seurat)
- Molecular docking and modelling (Gromacs, Autodock Vina, Discovery Studio, SPDBV)
- R programming
- Pathway & network analysis (STRING, Reactome, Cytoscape)
- NCBI, ENSEMBL, UniProt, GEO
- GraphPad Prism, ImageJ, MS Office Tools, LaTex.

Wet Lab Techniques

- DNA/RNA extraction, protein extraction, qPCR, Western blotting
- Cell culture (HepG2, Hepa 1-6, 3T3-L1, MCF-7)
- ELISA, Immunohistochemistry, Oil-o-red staining
- Confocal microscopy
- Cell membrane permeability assays using calcein AM

RESEARCH AREAS OF INTEREST

Protein Expression, Genomics, Bioinformatics, Computational Biology.

RESEARCH EXPERIENCE

Ph. D. Research

- Designed and executed experiments to investigate the localization and expression of aquaporins in bovine liver and adipose tissue using **immunohistochemistry, western blotting, and RT-PCR**.
- Performed **protein extraction, SDS-PAGE, cell culture, and confocal microscopy**.
- Analyzed experimental data using statistical tools, bioinformatics software, and lab-based analysis platforms to derive insights.
- Optimized protocols and assays to ensure accuracy, reproducibility, and efficiency in experimental workflows. Also maintained comprehensive lab records and prepared reports and presentations to communicate findings effectively.

EDUCATION

- **Ph.D.** in Animal biochemistry (Pursuing)
National Dairy Research Institute, Karnal, HR, India.
- **M.Sc.** in Biochemistry (2019)
G. B. Pant University of Agriculture and Technology, Pantnagar, UK, India.
 - **B.Sc.** in Biotechnology (2017)
Shri Shivaji College of Agriculture Biotechnology, Amravati, MH, India

PUBLICATIONS

- **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). <https://link.springer.com/article/10.1007/s10735-024-10305-2>.
- 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., Anju Nagpal, Ashutosh, Sunita Meena “*Effect of the Seasons on the Expression of Aquaporins in the Bovine Liver and Adipose Tissue*” (under preparation)
- **Payal S. Mate**, Fathima Jasmin A. T., Anju Nagpal, Ashutosh, Sunita Meena “*In Vitro and in Silico Methods to Assess Zingerone as Aquaporin 9 Inhibitor*” (under preparation)
- **Payal S. Mate**, Vivek C. Verma, Sanjeev Agrawal, Jai Prakash Jaiswal, Venugopalan Visha Kumari, Rajeev Kumar, Mala Kumari, Ahmed Gaber, Akbar Hossain “*Effect of Fenugreek (*Trigonella foenum-graecum L.*) Seed Extract on Glycaemic Index, in vitro Digestibility and Physical Characterization of Wheat (*Triticum aestivum L.*) Starch*” (Journal of Food Science, 2025).

NUCLEOTIDE SEQUENCES SUBMITTED TO GENE BANK (NCBI)

Accession numbers: ON456448, ON456449, ON456450, ON456451, ON456452, ON456453, ON456454, ON456455, ON456456, ON456457, ON456458, ON456459, ON456460, ON456461, ON456462, ON456463, ON456464.

AWARDS/ FELLOWSHIPS

- Received **Best Scientific Story Award** by **Augmenting Writing Skills for Articulating Research-Department of Science and Technology, India (AWSAR-DST) (2023)**
- Junior Research Fellow by the Department of Biotechnology (DBT), Government of India (**DBT-JRF 2020**).
- Qualified ICMR-JRF examination by the Indian Council of Medical Research in life sciences (**ICMR-JRF 2020**).
- Qualified the joint **CSIR-UGC TEST** by the Council of Scientific and Industrial Research, India (**2018**).
- Qualified **ICAR NET** examination by Indian Council of Agricultural Research (ICAR) **ARS-NET (2018)**.
- Received **National Talent Scholarship (NTS)** during M.Sc. (**2017-2019**).

CONFERENCES ATTENDED

- Presented in an international conference organized by **Proteomics society of India 2024**.
- Received best paper presentation award at the international conference **AAVASILES 2022**.
- Held the third position in poster presentation in a symposium organized by the Society of Biological Chemists (India) (**2018**).
- Participated and presented research project at 11th Maharashtra State-Inter University Research Convention (**AVISHKAR-2017**).

WORKSHOPS ATTENDED

- Attended a one-month international digital workshop on **AI & Machine Learning for Drug Discovery** (March 29 – April 22, 2025) with a total duration of 25 hours.
- Participated in hands-on training on R programming for biological data analysis (March 2025).
- Completed experimental training in next-generation sequencing (NGS) and transcriptomic data analysis (RNA-Seq & Transcriptome Analysis).
- Participated in Hands-On Workshop in Molecular Docking Completed training on predicting molecular interaction energies.

TEACHING EXPERIENCE

- Conducted practical classes of biochemical techniques (2020-21) and molecular biology (NDRI Karnal) (2021-22).