

Kavya A. Pandya

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1323 E. Shoreview Dr., San Ramon, CA

Education

Institute of Advanced Research

Ph.D. In Biotechnology (Allied Areas)

Gandhinagar, IN
2020-2025

Nirma University

M.Sc. in Biochemistry

Ahmedabad, IN
2018-2020

St. Xavier's College

B.Sc. in Biochemistry

Ahmedabad, IN
2015-2018

Research Experience

Ph.D. Researcher | Institute of Advanced Research

Project Title: Investigate The Interplay Between MDC1 And Beclin-1 In Oxidative Stress And Drug Induced DNA Damage.

- Conducted in silico protein-protein interaction analysis using molecular docking, dynamics simulation, and binding affinity prediction.
- Studied molecular cross-talk between DDR and autophagy-related proteins using co-immunoprecipitation, western blotting, and fluorescence microscopy.
- Analyzed the cytotoxic effects of DNA-damaging agents on MDC1-knockdown cell lines to understand sensitivity to chemotherapeutic agents.

Junior Research Fellow | Gujarat Biotechnology Research Center

Project: Global Challenge Research Fund - One Health Poultry Hub

- Isolated and characterized bacterial strains from poultry samples using biochemical assays and molecular techniques (PCR, 16S rRNA sequencing).

Master's Dissertation | Nirma University

Project: Identification and cloning of novel Rab9 homologue in Entamoeba histolytica

- Identified Rab9 homologue using computational tools followed by cloning and expression in Entamoeba trophozoites.

Summer Intern | Amneal Pharmaceuticals Pvt. Ltd.

Gained hands-on experience in sterility testing and microbial contamination analysis in drug manufacturing processes.

Publications

1. **Kavya Pandya** and Neeru Singh. (2025) Unraveling The Molecular Interactions Between DDR And Autophagy In Response To Oxidative Stress. Cancer Research
2. Neeru Singh and **Kavya Pandya** (2025) Decoding the DDR and Autophagy cross talk, a cellular response to genotoxic stress and its implications in cancer therapy. Journal of Biological Chemistry
3. Saurabh Vyas, **Kavya Pandya**, Neeru Singh and Roli (2025) Mishra. A Turn off Fluorescent Ionic Liquid with Carbazole Fluorophore for Sensing Fe²⁺ ions. Journal of Molecular structure
4. **Pandya Kavya.**, & Singh Neeru. (2022). In silico study reveals unconventional interactions between MDC1 of DDR and Beclin-1 of autophagy. Molecular Diversity.
5. **Pandya Kavya.**, Jagani Deep., & Singh Neeru. (2023). CRISPR-Cas Systems: Programmable Nuclease Revolutionizing the Molecular Diagnosis. Molecular Biotechnology.

5. Rathore, S. **Pandya K**, et al. (2024). Applications and associated challenges of CRISPR-Cas technology in agriculture. Elsevier Academic Press.
6. **Pandya Kavya**, & Singh Neeru. (2022). CRISPR-Cas System: Molecular Scissors Revolutionizing Genetic Engineering. Natural Sciences (Institutional Journal of IAR).
7. **Pandya Kavya**, Jagani Deep., Panchal Charmi. and Singh Neeru. MDC1 Downregulation Enhances the Efficacy of CHK1 Inhibitor AZD7762 in Cervical Cancer Cells (Under Communication)
8. **Pandya Kavya** and Singh Neeru. MDC1 Interacts with Beclin-1 to Coordinate the DNA Damage Response and Autophagy Under Oxidative and Chemotherapeutic Stress (Under Communication)

Honors and Awards

- Best Oral Presentation Award - Annual Research Conclave (2023)
- Lady Tata Memorial Trust Fellowship (2022)
- Department of Biotechnology - Junior Research Fellowship (DBT-JRF) (2021)
- Graduate Aptitude Test in Engineering (GATE) - Lifesciences: **AIR: 710** (2021)
- SHODH Fellowship (2021)
- Gujarat State Eligibility Test (GSET) (2019)
- Minaxi-Lalit Science Award (2017)

Technical Skills

• Molecular & Cell Biology

Mammalian cell culture, parasite culture, primary cell handling RNA, DNA, and protein isolation; PCR; qPCR; molecular cloning, transfection, MTT, CTG assay and ADP Glo assay, Apoptosis analysis by PI-Annexin V staining, Clonogenic assay, Cell cycle analysis by using Propidium-Iodide, Western blotting, Immunocytochemistry, Fluorescence microscopy, Co-immunoprecipitation (co-IP), Flow cytometry, Nuclear fractionation

• Bioinformatics & Computational Biology

Molecular docking, protein-protein docking, ligand docking Molecular dynamics simulation, homology modeling, sequence alignment Domain prediction tools (RabDB, Pfam, Clustal W, BLAST, ApE, Chromas)

• Instrumentation

Gel electrophoresis, spectrophotometry, nanodrop, ELISA reader, luminometer, Flow cytometry, Fluorescence microscope.

Conferences and Workshops

- Poster presentation at American Association of Cancer Research-Annual Meeting: 2025
- Poster presentation at MedBiotech Conference: 2024
- Oral presentation at Annual Research and Innovation Conclave
- Organized "Animal cell culture techniques and apoptosis detection assays" funded by GSBTM
- Oral and poster presentation at Annual research conclave 2021
- Attended Hands on workshop on Flow-cytometer conducted by Nirma University in 2020
- Attended workshop on CRISPR-Cas 9 conducted by Nirma University in 2019.
- Lab visit at 'SUPRATECH LABORATORIES', to gain insight on cytogenetic tests including FISH, Karyotyping, Automated Sanger sequencing etc

