Dr. Kajal Yadav, Ph.D. in Medical Microbiology

Microbiologist | Researcher | Educator

Contact Information:

Permanent Address: S no.119/1B/Plot no.6, Unity Crown, Godoli, Satara – 415001

Current Address: G-57, Hingane Home Colony, Karve Nagar, Pune - 411052

Phone: +91 9284145378

Email: kajalyadav5597@gmail.com

LinkedIn: Dr. Kajal Yadav, Ph.D.

Summary:

A passionate and results-driven Microbiologist with a Ph.D. in Microbiology, specializing in the comparative genomics of Gram-negative bacilli, with particular emphasis on elucidating the genetic and phenotypic mechanisms behind the emergence and spread of multidrug resistance. I bring over three years of dedicated teaching experience at the undergraduate and postgraduate levels, fostering a strong academic foundation and a commitment to student mentorship. Demonstrates extensive hands-on expertise in microbiological techniques, molecular biology methodologies, and genomic analysis. Skilled in the application of bioinformatics tools and computer-based data analysis for large-scale genomic and antimicrobial resistance studies. Known for a collaborative and detail-oriented approach to research, with a deep commitment to advancing scientific knowledge and contributing to public health solutions. Currently seeking opportunities to contribute to multidisciplinary research teams, academic environments, or public health initiatives, where scientific rigor, education, and innovation intersect.

Education:

- Ph.D. in Medical Microbiology, Department of Microbiology, Krishna Vishwa Vidyapeeth, Karad, March 2025
- Master of Science in Microbiology, Department of Microbiology, Krishna Vishwa Vidyapeeth, Karad, 2020
- Bachelor of Science in Microbiology, Yashwantrao Chavan College of Sciences, Karad, 2018

Research Experience:

Doctoral Research:

- Phenotypic and Genotypic Study of Colistin-Resistant Gram-Negative Bacilli in a Tertiary Care Hospital.
- Designed and conducted experiments involving phenotypic methods such as antibacterial susceptibility testing using broth microdilution, disk diffusion, and well diffusion assays, alongside advanced molecular biology techniques including PCR, and comprehensive bioinformatics analyses.

Teaching Experience:

- Developed and taught postgraduate and graduate courses in microbiology, medical microbiology, molecular biology, and bioinformatics.
- Guiding students in research projects, guiding experimental design, data analysis, and scientific writing.
- Ph.D. Scholar, Krishna Vishwa Vidyapeeth (School of Dental), Karad, Tenure: 03/09/2022 to 30/04/2024

Technical Skills:

- Extraction of proteins and nucleic acids (including genomic DNA, plasmid DNA, and RNA), primer design, and gene amplification using PCR.
- Electrophoresis and chromatographic separation of proteins and nucleic acids
- Antibiotic susceptibility testing of bacterial pathogens.
- Analysis of bactericidal, bacteriostatic, biofilm inhibitory action of bacteriophages, phage lysins, nanoparticles, antimicrobial peptides, and plant-derived biomolecules on bacterial pathogens
- Isolation, cultivation, and maintenance of bacterial, fungal, yeast, and eukaryotic cell cultures
- Isolation, purification, and activity assay of bacterial enzymes
- Biochemical estimation of protein, nucleic acids, lipids, and carbohydrates
- Extraction and analysis of bioactive (antimicrobial) compounds from plants
- Antigen-antibody reactions, including single and double diffusion techniques
- Microscopic techniques

Publications:

Belekar Neha, Yadav **Kajal S.** and Pathade Girish R, Chonde Sonal G Use of the extracts of Syzygium cumini and Piper betel plant for disinfection of Publication date: 2023/11 Journal. Bulletin of Environment, Pharmacology and Life Sciences.

Yadav SA, Pawar SK, Kakade SV, **Yadav KS**. Pseudomonas aeruginosa from a Tertiary Teaching Hospital: A Study of AmpC and Biofilm-producing Clinical Isolates. Journal of Datta Meghe Institute of Medical Sciences University. 2024 Apr 1;19(2):304-8.

Yadav KS, Pawar S, Datkhile K, Patil SR, Patil S. Study on the Mobile Colistin Resistance (mcr-1) Gene in Gram-Negative Bacilli in a Rural Tertiary Care Hospital in Western Maharashtra. Cureus. 2024 Dec 11;16(12).

Yadav KS, Pawar S, Yadav SA, Patil S. Comparative Analysis of Colistin Resistance in Pseudomonas aeruginosa: VITEK® 2 Compact Versus Broth Microdilution Method. Cureus. 2024 Dec 30;16(12).

Yadav KS, Datkhile K, Pawar S, Patil S**.** An Overview of the Genetic Mechanisms of Colistin-Resistance in Bacterial Pathogens: An Indian Perspective. Cureus. 2025 Feb 9;17(2).

Authored the submission of nucleotide sequences for five genes involved in colistin resistance to NCBI GenBank, now publicly available under accession numbers **PQ631169 to PQ631173.**

Yadav KS, Pawar S, Datkhile K, Patil S. Clinical and Antimicrobial Profile of Colistin-Resistant Gram-Negative Bacilli Among Hospitalized Patients in a Rural Academic Medical Centre in India.

Conference:

Poster presentation in National conference: Comparative Analysis of Colistin Resistance in Pseudomonas aeruginosa: VITEK® 2 Compact Versus Broth Microdilution Method. 03/02/2023

Paper presentation in National conference: Study on the Mobile Colistin Resistance (mcr-1) Gene in Gram-Negative Bacilli in a Rural Tertiary Care Hospital in Western Maharashtra. 22/11/2024

Workshop:

Intradisciplinary Research Conference-2019 held on March 2019

Workshop on IPR Activities held in September 2019.

Alignment of Health Profession Education with NEP 2020- A Way forward held on Feb 2023

CME on Prevention of **Hospital-Acquired Infection** head on the June 2024.

One Day Hands-on Training Workshop on **Fluorescence in Situ Hybridization (FISH)** held on Sept, 2024.

Courses:

Basic Course in Biomedical Research with a Score of 60%.

One health with Score of 75%.

Scientific Writing with Score of 76%.