Dr. Bhanwar Bamniya, PhD

Molecular Microbiologist | *Mycobacterium tuberculosis* | Host–Pathogen Biology | Bacterial Stress & Metabolism

Email: bamniyabhanwar@gmail.com **Phone:** +91 7412921553 **Location:** India

RESEARCH PROFILE

Molecular microbiologist with more than Six years of experience in BSL-3 research on *Mycobacterium tuberculosis*, with a research focus on virulence regulation, intracellular survival, host–pathogen interactions, stress adaptation and bacterial metabolism. Experienced in bacterial genetics, molecular biology, protein biochemistry, microscopy, transcriptomics, infection biology and mouse models.

RESEARCH INTERESTS

- Mycobacterial pathogenesis and intracellular survival
- Host–pathogen interactions and infection biology
- Bacterial stress adaptation and signal transduction
- Metabolic regulation and nutrient utilization
- Bacterial genetics and transcriptional regulation
- Antimicrobial and therapeutic target discovery

RESEARCH EXPERIENCE

PhD Researcher — CSIR-Institute of Microbial Technology (CSIR-IMTech), Chandigarh

Senior Project Associate- CSIR-Institute of Microbial Technology (CSIR-IMTech), Chandigarh

(September, 2024- March, 2026)

Scientist C — DIAMOnDS Laboratory, AIIMS Jodhpur

(March, 2026-October, 2026)

Scientist B — ICMR-NIHR, Jodhpur

(October,2026-Present)

EDUCATION

PhD, Microbiology	CSIR-IMTech, Chandigarh	2019–2025
MSc, Microbiology	MLSU, Udaipur, Rajasthan	2015–2017
BSc, Biotechnology	University of Rajasthan, Jaipur	2012–2015

PhD thesis: “Probing newer metabolic functions of *Mycobacterium tuberculosis* virulence regulator PhoP”

TECHNICAL EXPERTISE

BSL-3 & Microbiology	*M. tuberculosis* culture and manipulation; infection biology; intracellular survival; host–pathogen studies

Molecular Biology	PCR/RT-PCR; RT-qPCR; cloning; site-directed mutagenesis; CRISPR-Cas9; mycobacterial recombineering; competent-cell preparation; agarose electrophoresis
Transcription & Regulation	RNA-seq; EMSA; ChIP/ChIP-qPCR; β-galactosidase assays
Protein & Biochemistry	Protein purification; SDS-PAGE; Western blotting; enzyme assays; pull-down assays; co-immunoprecipitation
Microscopy	Fluorescence microscopy; confocal microscopy
Animal Models	C57BL/6 and BALB/c mouse models

SELECTED PUBLICATIONS

• **Bamniya B**, Kajal, Mehta K, Sarkar D. *Transcriptional control of asparagine utilization regulates mycobacterial pH-driven adaptation at the host-pathogen crossroads.* **Journal of Biological Chemistry**, 2026.

• Khan H, Paul P, Goar H, **Bamniya B**, Baid N, Sarkar D. *Mycobacterium tuberculosis PhoP integrates stress response to intracellular survival by regulating cAMP level.* **eLife**, 2024.

• Singh PR, Goar H, Paul P, Mehta K, **Bamniya B**, et al. *Dual functioning by the PhoR sensor is a key determinant to Mycobacterium tuberculosis virulence.* **PLOS Genetics**. 2023.

Mehta K, Kajal, Goar H, **Bamniya B**, Sarkar D. *A transcriptional repressor co-regulatory network integrates iron homeostasis and mycobacterial stress tolerance to oxidative stress.* **Journal of bacteriology, 2026**

• Paul P, Mehta K, Ujjainiya R, **Bamniya B**, et al. *Context-dependent acetylation of the virulence regulator PhoP accounts for carbon source specific intracellular growth program of Mycobacterium tuberculosis.* Manuscript under communication.

AWARDS, QUALIFICATIONS & CONFERENCE PRESENTATION

• **CSIR-NET JRF 2019** — All India Rank 48

• **CSIR-UGC JRF 2020**

• **GATE Life Sciences 2019** — All India Rank 830

• **EMBO conference poster presentation** — “Mycobacterium tuberculosis PhoP integrates stress response to intracellular survival by regulating cAMP level”, Host and pathogen heterogeneity in tuberculosis, Hyderabad, 2025.