

## CURRICULUM VITAE

### DEMOGRAPHIC AND PERSONAL INFORMATION

# SHRUTI GUPTA



#### Contact Information:

Dr. Shruti Gupta

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Assistant Professor and Head of Dept., Dept. of  
Biotechnology  
St. Bede's College, Shimla

### EMPLOYMENT HISTORY:

#### Title/Position

#### University/Institution

#### Period

Assistant Professor &  
Head

Dept. of Biotechnology  
St. Bede's College, Shimla

August 2016- Present

### EDUCATION:

- **Ph.D. in Biotechnology**  
Himachal Pradesh University, 2017–2022  
Title: Application Of Oxalate Decarboxylase of *Pseudomonas* sp. in Solubilisation of Oxalate Stones
- **M.Phil. in Biotechnology**  
Himachal Pradesh University, 2014–2016  
Title: “Purification, kinetic analysis and applications of an extracellular ribonuclease produced from a bacterial isolate RNS3”
- **M.Sc. in Biotechnology**  
Shoolini Institute of Life Sciences and Business Management, 2012–2014
- **B.Sc. in Biotechnology**  
St. Bede's College, Shimla, 2009–2012

## **CERTIFICATIONS AND EXAMINATIONS**

- **CSIR-NET (Life Sciences)** – Qualified, 2016
- **HP-SLET** – Qualified, 2016
- **ICAR-NET** – Qualified, 2015
- **GATE (Life Sciences)** – Qualified, 2015

## **RESEARCH INTERESTS:**

- Enzyme Technology | Molecular Biology | Microbial Biotechnology | Immunology | Bioprocess Technology | Recombinant DNA Technology
- Protein Purification | Structural Bioinformatics | Kidney Stone Pathophysiology

## **PROFESSIONAL EXPERIENCE:**

- Instruct undergraduate students in core Biotechnology courses
- Supervise student projects and research dissertations
- Member of academic committees contributing to syllabus development and e-learning resources
- Promote inquiry-based learning through workshops and seminar facilitation
- Instruct undergraduate students in core Biotechnology courses

## **LABORATORY SKILLS:**

- Microbiological Techniques: Aseptic technique, culturing and isolation of bacteria, preparation of microbial media, identification of microorganisms, microbial growth kinetics, antibiotic susceptibility testing (disc diffusion, MIC), and microbial enzyme assays.
- Immunological Techniques: ELISA, Western blotting, immunodiffusion, immunoelectrophoresis, antigen-antibody interaction studies, and immunoassays.
- Molecular Biology Techniques: DNA/RNA isolation, PCR, agarose gel electrophoresis, RT-PCR, cloning, and in silico molecular analysis.
- Biochemical Techniques: Protein purification, enzyme kinetics, spectrophotometry, chromatography (TLC, paper, and column), and protein estimation assays (Bradford, Lowry).
- Cell Biology Techniques: Cell culture, microscopy, viability assays, and cytotoxicity assays.
- *In Silico* Tools & Bioinformatics: Sequence analysis (BLAST, ClustalW), protein structure modeling, docking studies, and phylogenetic analysis

## **UNDERGRADUATE PROJECTS SUPERVISED:**

- Bioethanol production from waste paper
- Transformation and cloning in *E. Coli*
- Effect of Toothpastes and processed foods on bacteria isolated from oral flora

## RESEARCH PROFILE:

Google Scholar:

<https://scholar.google.com/citations?user=AkLfytoAAAAJ&hl=en>

RESEARCHGATE

<https://www.researchgate.net/search.Search.html?query=&type=researcher>

ORCID ID

<https://orcid.org/0000-0003-2796-4451>

## RESEARCH PUBLICATIONS:

- **Gupta, S., & Kanwar, S.S. (2024).** Bio-economic Establishment of a Carbon Neutral India: Vital Role of Biotechnology. *Journal of Research: The Bede Athenaeum*, January 2024.
- **Gupta, S., & Kanwar, S.S. (2023).** Potential of Oxalate Decarboxylase of *Pseudomonas* sp. OXDC12 in Degradation of Oxalate Content of Vegetables. *Journal of Research: The Bede Athenaeum*, March 2023.
- **Gupta, S., & Kanwar, S.S. (2023).** Biomarkers in Renal Cell Carcinoma and Their Targeted Therapies: A Review. *Exploration of Targeted Anti-tumor Therapy*, 4(5):941.
- **Gupta, S., & Kanwar, S.S. (2022).** Intestinal Dysbiosis Induced Chronic Inflammation That Risks up Oxalate Nephropathy. *Journal of Cell Science & Therapy*, 13:342.
- **Gupta, S., & Kanwar, S.S. (2022).** Molecular Characterization and In Silico Analysis of Oxalate Decarboxylase of *Pseudomonas* sp. OXDC12. *Journal of Biomolecular Structure and Dynamics*.
- **Gupta, S., & Kanwar, S.S. (2021).** Optimization of Growth Conditions for Oxalate Decarboxylase Production from *Pseudomonas* sp. OXDC12. *Current Biotechnology*, 10(2).
- **Gupta, S., & Kanwar, S.S. (2021).** Plant Protease Inhibitors and Their Antiviral Activities—Potent Therapeutics for SARS-CoV-2. *Journal of Medical Discovery*, 6(1): jmd20068.
- **Gupta, S., & Kanwar, S.S. (2020).** The Influence of Dysbiosis on Kidney Stones That Risk Up Renal Cell Carcinoma (RCC). *Seminars in Cancer Biology*.
- **Gupta, S., & Kanwar, S.S. (2018).** Phyto-molecules for Kidney Stones Treatment and Management. *Biochemistry and Analytical Biochemistry*, 7:362.
- **Gupta, S., & Kanwar, S.S. (2018).** **Kidney Stones:** Mechanism of Formation, Pathogenesis and Possible Treatments. *Journal of Biomolecules and Biochemistry*, 2(1):1–5.
- **Gupta, S., Singh, S., & Kanwar, S.S. (2017).** Purification and Characterization of an Extracellular Ribonuclease from a *Bacillus* sp. RNS3. *International Journal of Biological Macromolecules*, 97:440–446.
- **Gupta, S., Singh, S., & Kanwar, S.S. (2016).** An Overview of Ribonucleases and Their Therapeutic Effects. *Insight Medicine*, 1:1–11.
- **Kanwar, S.S., Mishra, P., Meena, K.R., Gupta, S., & Kumar, R. (2016).** Ribonucleases and Their Applications. *Journal of Advanced Biotechnology and Bioengineering*, 4(1):17–26.

### Forthcoming

- **Gupta, S., & Kanwar, S.S.** Anti-nephrolithiatic efficacy of a potential oxalate decarboxylase: An in vitro study. *Research Journal Of Biotechnology*.
- **Gautam, N., Kumar, P., Sharma, S., Kumar, V., Gupta, S.** Synthesis and Characterization of Microbial Fructosyltransferase (FTase) from endophytic *Bacillus stercoris* S1 for Fructoligosaccharide

production. Annals of Microbiology.

#### Book Chapters

- **Gupta, S., & Kanwar, S.S. (2025).** *Medicinal plants and natural products: The anti-urolithiatic potential*. In. Molecular Medicine and Biomedical Research in the Era of Precision Medicine. ISBN 978-0-443-22300-6 <https://doi.org/10.1016/B978-0-443-22300-6.00014-0>
- **Gupta, S., & Kanwar, S.S. (2023).** *Microbial Biopharmaceuticals in Urolithiasis Management and Treatment*. In. Role of Microbes in Sustainable Development. pp 641–652
- **Gupta, S., & Kanwar, S.S. (2022).** *Nanodrugs: A Futuristic Approach for Treating Nephrolithiasis*. Book Chapter, July 2022.
- **Gupta, S., & Kanwar, S.S. (2020).** *Therapeutic Applications of Microbial Enzymes in the Management of Kidney Stone Diseases*. In: *Microbial Enzymes: Roles and Applications in Industries*, Springer Nature.

#### In Press

- **Gupta, S., & Kanwar, S.S. (2025).** *Gut Microbiome and Urolithiasis*. In. Microbiomes and Human Health and Wellness. Apple Academic Press.

#### CONFERENCES & PRESENTATIONS

- Presented a paper entitles: “Anti-nephrolithiatic efficacy of a potential oxalate decarboxylase” in the **International Conference on Recent Advances in Material and Biological Sciences**, November, 2024.
- Member of the organizing committee of the National Conference on Novel Progressions in science and Technology, orgabized by St. Bede’s College from November 28-29, 2022.
- 🏆 **1st Place**, Poster Presentation, **International e-Conference on Bioengineering for Health & Environment (ICBHE 2021)** – "In silico analysis of oxalate decarboxylase"
- Paper on "*Optimization of media components using RSM*" – National Seminar on Bioprocess Development, HPU (2019)
- Presented at **BICON-2018**, and multiple national and international conferences on enzyme-based kidney stone therapeutics.

#### PROFESSIONAL DEVELOPMENT & WORKSHOPS

- Completed an **NEP 2020 Orientation and Sensitization Programme under Malavia Mission Teacher Training Programme (MM-TTP)** of UGC from June 2 -June 10, 2025.
- Attended a **FDP on Generative AI Tools Enhancing Teaching and Learning AT HEI** from May 5- May 10, 2025.
- Organized a Two-Day **Workshop on Skill Development for Young Budding Entrepreneurs** from October 4-5, 2024 as Co-Convenor
- **Faculty Development Program** on Online Teaching Tools, St. Bede’s College (2020)
- **Workshop on Calibration of Research Equipment**, HPU & NRTC, Parwanoo (2019)
- Webinars on Molecular Taxonomy, Bioinformatics, and Pandemic Response Strategies

## **TEACHING**

- Cell Biology
- Enzymology
- Mammalian Physiology
- Recombinant DNA Technology
- Immunology
- Bioprocess Technology
- Bioanalytical Tools
- Instrumentation Method Analysis
- Biochemical Engineering
- Plant Biotechnology
- Animal Biotechnology
- Molecular Diagnostics

## **LANGUAGES**

English (Fluent)  
Hindi (Fluent)

## **REFERENCES**

Available upon request.