

DR. DEEKSHA TRIPATHI, Ph.D. (JNU)

Assistant Professor,
Department of Microbiology,
Central University of Rajasthan, India.
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EMPLOYMENT DETAILS

- Assist. Professor** Department of Microbiology, **Central University of Rajasthan**, India.
(December 2016- Present)
- Visiting Scientist** UCL Department of Neuroscience Physiology & Pharmacology, **University College London**, Gower Street, London, WC1E 6BT with Prof. Frances Edwards (2022-23)
- Postdoctoral Scholar** School of Biological Sciences, **Indian Institute of Technology**, Delhi.
(2015-2016)
- Assist. Professor** Department of Microbiology, **Gargi College, University of Delhi**, New Delhi, India. (2014-2015)

EDUCATION

- PH.D. (Biotechnology)** School of Biotechnology, **Jawaharlal Nehru University**, New Delhi, India, (2009-2014)
- M.SC. (Microbiology)** **University of Delhi, South Campus**, New Delhi, India (2007-2009), 71.5% (Rank 3rd in University)
- B.SC. (Microbiology)** **University of Delhi**, New Delhi, India (2004-2007), 74.8% (Rank 5th in University)

AREAS OF RESEARCH

- **Host-Pathogen interactions**
- **Mycobacterium tuberculosis: dormancy and persistence**
- **Drug Designing**
- **Vaccine Development**

GRANTS RECEIVED

1. **SERB International Research Experience (SIRE) (2022-2023) – 16 Lakhs:** “Alzheimer's Disease: Methods for investigating protective effects in mouse brain of *Mycobacterium indicus pranii*, A saprophytic mycobacterium with immunomodulatory and Antitubercular properties” (File No: SIR/2022/000220).PI
2. **DST SERB Intensification of Research in High Priority Area (IRHPA) Grant (2022-27)- 9.6 Crore:** Creation of a BSL-3 facility at CURAJ under Rajasthan Biocluster for infectious diseases, therapeutics and diagnostics (File no-IPA/2021/000196).Co-PI

3. **DBT Biocare grant- (2019-2022)- 55 Lakhs:** “Identifying the role of *Mycobacterium indicus pranii* (MIP) in activating host innate immune response for development of new intervention strategy to combat tuberculosis (File no-BT/PR30553/BIC/101/1123/2018). **PI**
4. **UGC Startup grant- (2017-2019)- 10 Lakhs:** “Functional Characterization of FKBP type peptidyl-prolyl *cis/trans* isomerase of *M. tuberculosis* for its role in stress response of the pathogen” (File No-F.30-356/2017(BSR). **PI**

RESEARCH SUPERVISION

Ph. D.: 4 students (Pursuing)

M. Sc. dissertation: 14 students

Project JRF: 2

PATENTS

- Title: “**A Medicament For The Treatment Of Diseases By Biofilm Forming Microorganisms**”,
Pub No: US20200188477, **Publication date:** 25.10.2018, **International Filing Date:** 20.04.2018. **International Patent, Patentee: Indian Institute of technology, Delhi.**

REFRESHER/ORIENTATION COURSE ATTENDED

- Orientation Course attended at Central University of Rajasthan in May 2018
- Refresher Course attended at Lucknow University in December 2019
- FDP Course attended at Central University of Rajasthan in November 2020

PUBLICATIONS: (<https://www.ncbi.nlm.nih.gov/pubmed/?term=deeksha+tripathi>)

(Research Article)

1. Khawary M, Rakshit R, Bahl A, Juneja P, Kant S, Pandey S, **Tripathi D, (2023)** *M.tb-Rv2462c of Mycobacterium tuberculosis Shows Chaperone-Like Activity and Plays a Role in Stress Adaptation and Immunomodulation*, **Biology**; 12: 69. DOI:10.3390/ biology12010069, IF=5.168; (ISSN: 2079-7737)
2. Hasnain SE, Ehtesham N Z, **Tripathi D**, Grover S, Kumar A, Alam A, Pandey S **(2020)** A medicament for the treatment of diseases by biofilm forming microorganisms, **PATENT Publication** (USA, Application Number 16607061)
3. Kumar A#, Alam A#, Grover S#, Pandey S#, **Tripathi D**, Kumari M, Rani M, Singh A, Akhter Y, Ehtesham NZ, Hasnain SE **(2019)**, Peptidyl-prolyl isomerase-B is involved in Mycobacterium tuberculosis biofilm formation and a generic target for drug repurposing-based intervention. **npj Biofilms and Microbiomes**, 84:147–157, IF = 6.33 **#equal first author**; DOI:10.1038/s41522-018-0075-0; (ISSN No 2055-5008)
4. Pandey S#, **Tripathi D**#, Khubaib M#, Kumar A, Shaikh J, Ehtesham NZ, Hasnain SE, **(2017)** Mycobacterium tuberculosis peptidyl-prolyl isomerases show immunogenicity, alter cytokine profile and aid in intraphagosomal survival, **Frontiers in Infection and Cellular Microbiology** 7:38, DOI: 10.3389/fcimb.2017.00038. IF = 4.3, (UGC J number. 17720) (ISSN 2235-2988) **# Authors contributed equally**
5. Pandey S, Sharma A, **Tripathi D**, Kumar A, Khubaib M, Bhuwan M, Chaudhuri TK, Hasnain SE, Ehtesham NZ; **(2016)**. Mycobacterial peptidyl-prolyl isomerases show chaperone like activity; in vitro and in vivo; **Plos One** 11(3):e0150288, DOI:10.1371/journal.pone.0150288, .IF = 2.8, (UGC Journal no 37933) (ISSN 1932-6203)
6. **Tripathi D**, Kant S, Garg R, Bhatnagar R **(2015)** Low expression level of *glnA1* accounts for absence of cell wall associated poly-L-glutamate/glutamine in *Mycobacterium smegmatis*. **Biochem Biophys Res Communications**, 458:240-245. DOI:10.1016/ j.bbrc.2015.01.079. IF=2.5 (ISSN: 0006-291X)
7. Garg R, **Tripathi D**, Kant S, Chandra H, Bhatnagar R, Banerjee N **(2014)**. A conserved hypothetical protein Rv0574c is required for cell wall integrity and virulence of *Mycobacterium tuberculosis*. **Infection and Immunity**, 83:120-129. DOI:10.1128/ IAI.02274-14. IF=3.7, (ISSN 0019-9567)
8. Tripathi D, Chandra H, Bhatnagar R **(2013)** Poly-L-glutamate/glutamine synthesis in the cell wall of *Mycobacterium bovis* is regulated in response to nitrogen availability. **BMC Microbiology**, 13:226. DOI:10.1186/1471-2180-13-226 IF=4.4, (ISSN: 1471-2180)
9. Rahi A, Rehan M, Garg R, **Tripathi D**, Lynn AM, Bhatnagar R **(2011)** Enzymatic characterization of catalase from *Bacillus anthracis* and prediction of critical residues using information theoretic measure of relative entropy. **Biochem Biophys Res Commun** 411:88–95. DOI:10.1016/j.bbrc.2011.06.099. IF=2.5 (ISSN: 0006-291X)
10. Khawary M, Pandey S, Sharma O, Raunak, Sharma M, Malik R, **Tripathi D (2023)**, Identification of novel inhibitors for Trigger Factor (TF) of M. tb: An in silico investigation, **Journal of Biomolecular Structure and Dynamics** (Under Revision)

(Review Article)

1. Pandey S, Kant S, Khawary M, **Tripathi D (2022)**; Macrophages in Microbial Pathogenesis: Commonalities of Defense Evasion Mechanisms, **Infection and Immunity**, DOI:10.1128/IAI.00291-21 (ISSN 0019-9567)
2. **Tripathi D**, Kant S, Pandey S, Ehtesham NZ (2020), Resistin in Metabolism, Inflammation and Diseases, **The FEBS Journal**, DOI: 10.1111/febs.15322, IF = 4.74, (ISSN: 1742-464X)
3. Pandey S, Yadav B, Pandey A, Tripathi T, Khawary M, Kant S, **Tripathi D (2020)**; Lessons from SARS-CoV-2 Pandemic: Evolution, Disease Dynamics and Future, **Biology**; 9:141; DOI:10.3390/biology9060141, IF=3.79; (ISSN: 2079-7737)
4. Kumar A[#], Alam A[#], **Tripathi D**, Rani M, Khatoon H, Pandey S, Ehtesham NZ, Hasnain SE (2018); Protein adaptations in extremophiles: An insight into extremophilic connection of mycobacterial proteome, **Seminars in Cell and Developmental Biology**, **84**:147–157 DOI: 10.1016/j.semcdb.2018.01.003, IF=6.6, (UGC Journal No 35747) (ISSN 1084-9521) **# Authors contributed equally.**
5. Bharadwaj P, Rani M, **Tripathi D**, Banerjee A, Sengupta S, Pandey S, Kumar A, (2023) ESKAPE Pathogens: Menace of Antimicrobial Resistance and Its Mitigation, **Biotechnology and Genetic Engineering Reviews** (Under Review)

Books and Chapters in Edited Books

1. Sengupta S, Sengupta A, Hussain A, Sarma J, Banerjee A, Pandey S, **Tripathi D**, Peddireddy V and Kumar A (2023); **Modulation of host pathways by Mycobacterium tuberculosis for survival, in Book Bacterial Survival in the Hostile Environment**, Editors: Ashutosh Kumar, Shivendra Tenguria, **Academic Press**, ISBN: 9780323918060; 10.1016/B978-0-323-91806-0.00003-5
2. Rakshit R, Bahl A, Kumar A, **Tripathi D**, Pandey S (2023); **Biofilm: A Coordinated Response of Bacteria Against Stresses**, in Book Bacterial Survival in the Hostile Environment, Editors: Ashutosh Kumar, Shivendra Tenguria, **Academic Press**, ISBN: 9780323918060, DOI: 10.1016/B978-0-323-91806-0.00006-0
3. Banerjee A, Sengupta S, Nandanwar N, Pandey M, **Tripathi D**, Pandey S, Kumar A, Peddireddy V (2023); **Mycobacterium Tuberculosis Adaptation to Host Environment**, in Book Bacterial Survival in the Hostile Environment, Editors: Ashutosh Kumar, Shivendra Tenguria, **Academic Press**, ISBN: 9780323918060, DOI: 10.1016/B978-0-323-91806-0.00005-9
4. Pandey S, Raunak, Tripathi T, Khawary M, **Tripathi D**, Kant S (2022); Chapter 10 - **Molecular Mechanisms of Stress Adaptation by Bacterial Communities**, Editors: Raghendra Pratap Singh, Geetanjali Manchanda, Kausik Bhattacharjee, Hovik Panosyan; Microbial Syntrophy-Mediated Eco-Enterprising (1st edition), **Academic Press**, ISBN: 0323913962
5. Rani M, Paul B, Bhattacharjee A, Das K, Singh P, Basu S, Pandey S, **Tripathi D**, Kumar A (2022); Chapter 13 - **Detection and Removal of Pathogenic Bacteria from Wastewater Using Various Nanoparticles**, Editors: Maulin Shah, Susana Rodriguez-Couto, Jayanta Biswas; Development in Wastewater Treatment Research and Processes, **Elsevier**, Pages 311-322, ISBN 9780323855839, DOI:10.1016/B978-0-323-85583-9.00025-9.
6. Rani M, Bhattacharjee A, Singh P, Basu S, Das K, Goswami K, Pandey S, **Tripathi D**, Kumar A (2022); Chapter 22 - **Antimicrobial Activities of Different Nanoparticles Concerning to Wastewater**

- Treatment**, Editors: Maulin Shah, Susana Rodriguez-Couto, Jayanta Biswas, Development in Wastewater Treatment Research and Processes, **Elsevier**, Pages 501-514, **ISBN** 9780323855839, 10.1016/B978-0-323-85583-9.00029-6.
7. Minocha S, Khadgawat P, Bhattacharjee A, Kumar A, Tripathi T, Pandey S, **Tripathi D (2021); Role of Microbial Nanotechnology in Diagnostics**. In: Ansari M.A., Rehman S. (eds) **Microbial Nanotechnology: Green Synthesis and Applications**. **Springer**, Singapore, ISBN: 978-981-16-1922-9, DOI:10.1007/978-981-16-1923-6_12
 8. Bharadwaj P, **Tripathi D**, Pandey S, Tapadar S, Das D, Palwan E, Rani M and Kumar A (**2021**); **Molecular Biology techniques for the detection of contaminants in wastewater**; Book: **Wastewater Treatment: Cutting Edge Molecular Tools, Techniques and Applied Aspects**, (edited by Maulin P. Shah, Angana Sarkar, Sukhendu Mandal) **Elsevier**, ISBN: 9780128218815, DOI: 10.1016/B978-0-12-821881-5.00010-6
 9. Pandey S., Shukla N., Singh S.S., **Tripathi D.**, Tripathi T., Kant S. (**2020**) **Bacterial Metabolic Fitness During Pathogenesis**. In: Singh R., Manchanda G., Maurya I., Wei Y. (eds) **Microbial Versatility in Varied Environments**. **Springer**, Singapore (DOI: 10.1007/978-981-15-3028-9_12) (ISBN: 978-981-15-3028-9)
 10. Garg R, Mani R, Gupta M, **Tripathi D**, Chandra H, Bhatnagar R, Banerjee N (**2020**); **Chapter 11: Importance of cell wall associated Poly-a-L-glutamine in the biology of pathogenic mycobacteria**, (DOI: 10.1007/978-981-32-9413-11), Book: **Mycobacterium tuberculosis: Molecular Infection Biology, Pathogenesis, Diagnostics and New Interventions**, Springer (ISBN: 978-981-32-9412-7)
 11. Tapadar S, Goswami K, **Tripathi D**, Pandey S, Palwan E, Rani M, Kumar A (**2020**); **Role of Extremophiles and Extremophilic Proteins in Industrial Waste Treatment**; Book: **Removal of Emerging Contaminants Through Microbial Processes** (ISBN 9789811559006) (Editors: Moulin P Shah), **Springer**
 12. **Tripathi D.**, Pandey S., Kant S. (**2020**) **Biosensors: Current Trends**, Lalpawimawha, Lalmuanpuia Vanchhawng, B. Lalruatfela (eds), Book: **Proceedings of National Workshop on Sensor Networks, Internet of Things and Internet of Everything**, **Notionpress**, Chennai, India (ISBN 978-1-64760-657-2)

AWARDS AND HONORS

- **AMI – YOUNG SCIENTIST AWARD 2015 (MEDICAL & VETENARY MICROBIOLOGY)**
- **National Postdoctoral Fellowship DST- SERB 2016**
- **DBT Research Associateship Award 2015**
- ICMR International Travel Grant for ASM general meeting **2014** for poster presentation.
- **ASM 2014 Student Travel Grant** for poster presentation.
- **Young Scientist Award** (Women category) for oral presentation in National Symposium on Microbes in Health and Agriculture. (Under UGC resource networking) (MHA-2012), School of Life Sciences, JNU, New Delhi, India, 12-13 March **2012**.
- Awarded Best Title for the Abstract in ASM Virtual Workshop on Scientific Writing and Publishing (**ASM 2012**), KIIT University, Bhubaneswar, Odisha, India, November, 22 2012.

- CSIR-JRF and SRF Senior research fellowship (2009-2014)
- **Monsanto Scholarship** during MSc Microbiology (2007-2009).

CONFERENCES & SYMPOSIUM

1. Invited Lecture on “**Fungal disease the emerging threat to human health**” on 29.05.21 at Govt. Nehru PG Collage, Rajnandgaon (C.G.)
2. Participated in “One week faculty development program on **Implementation of national educational policy 2020, Role of Faculty members of HEIs**” conducted during 4-8 Nov, 2020 organized by Teaching learning center, Central University of Rajasthan.
3. UGC sponsored **Refresher course** in the subject of Botany and Life Sciences at University of Lucknow from Dec 17-31, 2019.
4. Invited Lecture on Transcriptomics: Analysis of gene at the Transcriptional Level, at **Modern Biology with focus on infectious disease**, at JH Institute of Molecular Medicine, Jamia Hamdard, New Delhi, India at Nov, Dec,14, 2019.
5. Invited Lecture at Department of Botany, CMP College, Univ. of Allahabad, Nov 15, 2019
6. Invited Lecture on the training program on “**Modern Biology with Focus on Infectious Diseases**” From Nov-18-14, 2019 organized by Jamia Hamdard University.
7. Invited Lecture on “**Biosensor: Current Trends**” in the National workshop on Sensor Networks, Internet of Things and internet of Everything, on September 12, 2019 at Pachhunga University Collage, Mizoram, India.
8. Participated in “Four week induction training program for teachers of higher education institutions (HEIs)” from 1-26 May, 2018 organized by Teaching Learning Centre, Central University of Rajasthan.
9. Invited Talk on “**Mycobacterium tuberculosis: New Insight into an old bug**” on Aug 24, 2018 organized by Department of Botany, CMP Collage, University of Allahabad.
10. Invited Lecture on “**Application of Microbiology in Agriculture and Industries**” on August 23, 2018 at Department of Botany, CMP College, Allahabad.
11. Participated in, **Annual Herpesviruses: Pathogenesis and Cancer Symposium** organized by Tumor virology program, School of Medicine, University of Pennsylvania, Philadelphia, PA, USA on, June 23, **2017**.
12. Participated in **The Noreen O'Neill Melanoma Research Symposium** at The Wistar Institute, the cancer institute distinguished by National Cancer Institute, Philadelphia, PA, USA on June 5, **2017**.
13. **Tripathi D, Kant S.** Non-coding small RNA modulates stability of *cry4A* mRNA of *B. thuringiensis israelensis*. **Bacillus ACT (2015)** The International Conference on *Bacillus anthracis*, *B. cereus* and *B. thuringiensis*, New Delhi, India, 27-31 October 2015.
14. **Tripathi D, Garg R, Kant S, Bhatnagar R.** Comparative study of *glnA1* promoter of *M. bovis* and *M. smegmatis*; its implications on poly- α -L-glutamine (PLG) synthesis in the cell wall of mycobacteria. 114th **General Meeting, American Society for Microbiology (ASM 2014)**, Boston, Massachusetts, USA, 17-20 May 2014.

15. Garg R, **Tripathi D**, Kant S, Chandra H, Bhatnagar R, Banerjee N. A dormancy protein Rv0574c is required for cell wall integrity and virulence of Mycobacterium tuberculosis H37Rv: WED-326. [Abstract] **FEBS Journal**. 281 Supplement 1:728, September **2014**.
16. Garg R, **Tripathi D**, Kant S, Chandra H, Bhatnagar R, Banerjee N. A conserved hypothetical protein Rv0574c is required for cell wall integrity and virulence of Mycobacterium tuberculosis. 113th General Meeting, American Society for Microbiology (**ASM 2013**), Denver, Colorado, USA, 18-21 May **2013**.
17. **Tripathi D**, Chandra H, Garg R, Kant S, Bhatnagar R. Comparative study of *glnA1* promoter of *Mycobacterium tuberculosis* and *Mycobacterium smegmatis*; its implications on poly- α -L-glutamine (PLG) synthesis in the cell wall of mycobacteria. International Conference on Microbial World: Recent Innovation and Future Trends. 53rd Annual Conference of **Association of Microbiologist of India (AMI)**, KIIT University, Bhubaneswar, Odisha, India, 22-25 November **2012**.
18. **Tripathi D**, Chandra H, Garg R, Kant S, Bhatnagar R. Comparative study of *glnA1* promoter of Mycobacterium bovis and Mycobacterium smegmatis; its implications in poly- α -L-glutamine (PLG) synthesis in the cell wall of mycobacteria. **National Symposium on Microbes in Health and Agriculture**. (Under UGC resource networking) (MHA-2012), School of Life Sciences, JNU, New Delhi, India, 12-13 March 2012 (Oral Presentation)- **1st prize for Young Scientist Award**.

MEMBERSHIP OF PROFESSIONAL BODIES/SOCIETIES

American Society of Microbiology	Annual Membership
Association of Microbiologists of India	Life Member (4113-2015)
Indian Science Congress Association	Life Member (L26708)
The Biotechnology Research Society	Life Member (LM 1896)
Society of Biological Chemists	Life Member (3772)

PROFESSIONAL ACTIVITIES

Reviewer Of Scientific Journals

- Plos One
- Cell Proliferation
- Infection, Genetics and Evolution
- Microbiology Spectrum

ADMINISTRATIVE RESPONSIBILITIES

- Warden-Girls hostel B1 (2017-19)
- Member of Cultural committee (2021-2023)
- Member of Institutional Bioethical Committee, Central University of Rajasthan (2017-2020)
- Member of NSS/NCC and sports committees, Central University of Rajasthan (2017-2018)
- Member of School Board, School Life Sciences, Central University of Rajasthan (2019-2022)

REFEREES

- ∞ **Prof. Seyed E. Hasnain,**
Honorary Professor, DBEB, IIT Delhi
Ex-Vice Chancellor University of Hyderabad,
Ex-member University Grant Commission (UGC),
Email- seyedhasnain@gmail.com,
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- ∞ **Prof. Rakesh Bhatnagar,**
Vice Chancellor, Amity University, Jaipur, Rajasthan
Ex-VC, Banaras Hindu University, Varanasi, Uttar Pradesh, 221005 and
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- ∞ **Prof. Inshad Ali Khan**
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Central University of Rajasthan
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- ∞ **Prof. Muthukalingam Krishnan**
Vice Chancellor, **Central University of Tamilnadu**
EX- VC, Madurai Kamraj University, Madurai, Tamilnadu.
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- ∞ **Prof. Frances Edwards**
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