

## Dr. Manish Kumar Tripathi

Research Associate  
Department of Biophysics  
All India Institute of Medical Sciences  
Ansari Nagar, New Delhi-110029  
E-mail: manishtripathi41@gmail.com  
Mobile No.: +91-9575620437, +91-9452604477



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### **Professional Experience**

February 2020-Continue	Research Associate, AIIMS, New Delhi
July-2017- February 2020	Post-Doctoral Fellow, IIT BHU, Varanasi, Uttar Pradesh
May-2016 – January 2017	Project Associate, Maulana Azad National Institute of Technology, Bhopal, Madhya Pradesh

### **Academic Background**

**Ph.D. in *Bioinformatics*** from *Maulana Azad National Institute of Technology, Bhopal* (2016) with course work SGPA 7.91.

**Title:** “*Computational study to investigate the role of industrial pollutants on immune proteins against tuberculosis*”

**Thesis Supervisor:** Prof. Rahul M Shrivastava

**Master of Science (M.Sc.) in *Bioinformatics*** from *University of Allahabad* (2009) with 68.68 %.

**Bachelor of Science (B.Sc.) in *Botany and Chemistry*** from *University of Allahabad* (2007) with 70.96 %.

### **Bioinformatics Skills:**

- Sequence Analysis & Phylogenetics- BLAST, PSI-BLAST, Clustal W, MEGA, PAUP & PHYLIP.
- Molecular Modelling- Protein modelling, structure based drug design, virtual screening, pharmacophore modelling, free energy calculation, quantum calculation and docking studies using Schrödinger, Discovery studio and Autodock.
- Molecular Dynamics simulation- Gromacs and Desmond
- Operating System- Unix, Windows/DOS etc.
- Scripting- Unix shell scripting, knowledge of Python and MATLAB
- Statistical analysis- R

**Technical Skills:** UV Spectroscopy, Elisa, Gel Electrophoresis, SDS PAGE, *In vitro* Enzyme assay methods, Enzyme Inhibition kinetics, Kinetic characterization of enzyme drug targets (IC50, kinetic constants).

### **Academic Scholarship/Awards/Achievements**

- Received CSIR-Foreign Travel Grant in 2019 for visiting Basel, Switzerland to attend Basel Life Congress-2019
- Received Institutional Post-Doctoral fellowship in 2017 from IIT-BHU.

- Received Best poster award in National seminar on Science for shaping the future of India organized by Indian Science Congress Association Bhopal Chapter & MPCST Bhopal (30-31Oct 2012).
- Received MHRD Institute fellowship in 2012 for completion of Ph.D.
- Qualified in GATE (Graduate Aptitude test in Engineering-2011, 2012).
- Secured 1<sup>st</sup> rank in Degree College during graduation.

### **List of Publications**

1. Chaubey PK, Tripathi A, **Tripathi MK**, Seth A, Shrivastava SK (2021) Design, Synthesis, and Evaluation of N-Benzylpyrrolidine and 1,3,4-Oxadiazole as Multitargeted Hybrids for the Treatment of Alzheimers Disease. *Bioorganic Chemistry* 111, 104922 (I.F.-4.8).
2. Singh P, **Tripathi MK** #, Shrivastava R (2021) *In silico* identification of linear B-cell epitope in coronavirus 2019 (SARS-CoV-2) surface glycoprotein: A prospective towards peptide vaccine. *Minerva Biotechnology and Biomolecular Research*. (I.F.-1.1) (#Equal contribution)
3. **Tripathi MK**, Singh P, Sharma S, Singh TP, Ethayathulla AS, Kaur P (2020) Identification of Bioactive Molecule from *Withania somnifera* (Ashwagandha) as SARS-CoV-2 Main Protease Inhibitor. *Journal of Biomolecular Structure and Dynamics* 8;1–14 (I.F.-3.3)
4. **Tripathi MK**, Sharma P, Srivastava P, Tripathi A, Tripathi PN, Seth A, Shrivastava SK (2020) Computational exploration and experimental validation to identify a dual inhibitor of cholinesterase and amyloid-beta for the treatment of Alzheimer's disease. *Journal of Computer-Aided Molecular Design* 34:983-1002. (I.F.-3.2)
5. **Tripathi MK**, Yasir M, Singh P, Shrivastava.R (2020) A comparative study to explore the effect of different compounds in immune proteins of human beings against tuberculosis: An *In silico* Approach. *Current Bioinformatics* 15:155-164. (I.F.-2.0)
6. Singh P, **Tripathi MK** #, Shrivastava R, Yasir M, Khare R, Tripathi MK, Shrivastava.R (2020) Potential Inhibitors for SARS-CoV-2 and Functional Food Components as Nutritional Supplement for COVID-19: A Review. *Plant Food for Human Nutrition* 75,458–466. (I.F.-2.9) (#Equal contribution).
7. Singh P, Yasir M, Khare R, Tripathi MK, Shrivastava R (2020) Snake Venom Phospholipase A2 and its Natural Inhibitors. *Natural Product Sciences*. 26(3) : 259-267
8. Tripathi A, Chaubey PK, Seth A, Sharma P, **Tripathi MK**, Shrivastava SK (2020) Design and Development of Multifunctional Hybrids of Ferulic Acid and 1,3,4-Oxadiazoles for the Treatment of Alzheimer's Disease. *Current Trends in Biotechnology and Pharmacy* 14(1):81-96.
9. Shrivastava SK, Sinha SK, Srivastava P, Tripathi PN, Sharma P, **Tripathi MK**, Tripathi A, Choubey PK, Waiker DK, Aggarwal LM, Dixit M, Kheruka SC, Gambhir S, Shankar S, Srivastava RK (2019) Design and Development of Novel p-Aminobenzoic Acid Derivatives as Potential Cholinesterase Inhibitors for the Treatment of Alzheimer's disease. *Bioorganic Chemistry* 82: 211-223. (I.F.-4.8)

10. Tripathi PN, Srivastava P, Sharma P, **Tripathi MK**, Seth A, Tripathi A, Rai SN, Singh S, Shrivastava SK (2019) Biphenyl-3-oxo-1,2,4-triazine linked piperazine derivatives as potential cholinesterase inhibitors with anti-oxidant property to improve the learning and memory. *Bioorganic Chemistry* 85:82-96. (I.F.-4.8)
11. Sharma P, Tripathi A, Tripathi PN, Prajapati SK, Seth A, **Tripathi MK**, Srivastava P, Tiwari V, Krishnamurthy S, Shrivastava SK. (2019) Design and Development of Multitarget-Directed N-Benzylpiperidine Analogs as Potential Candidates for the Treatment of Alzheimer's Disease. *European Journal of Medicinal Chemistry* 167:510-524. (I.F.-5.5)
12. Tripathi A, Choubey PK, Sharma P, Seth A, Tripathi PN, **Tripathi MK**, Prajapati SK, Krishnamurthy S, Shrivastava SK. (2019) Design and Development of Molecular Hybrids of 2-Pyridylpiperazine and 5-Phenyl-1,3,4-oxadiazoles as Potential Multifunctional Agents to Treat Alzheimer's Disease. *European Journal of Medicinal Chemistry* 183:111707 (I.F.-5.5)
13. Yasir M, **Tripathi MK**, Singh P, Shrivastava R (2019) The genus *Glycosmis* (*Rutaceae*): A comprehensive review on its Phytochemical and pharmacological perspectives. *The Natural Products Journal* 9:98-124.
14. Singh M, **Tripathi MK**, Singh AK, Shekhar C, Gambhir IS, Kumar B, Purohit S (2018) A therapeutic approach to target mitochondrial dysfunction using molecular docking studies: Screening of natural drugs for Oral Carcinoma. *Pharmacognosy Magazine* 14(55):192-196. (I.F.-1.5)
15. Shrivastava SK, Patel BK, Tripathi PN, Srivastava P, Sharma P, Tripathi A, Seth A, **Tripathi MK** (2018) Synthesis, evaluation and docking studies of some 1,3,4-thiazolinone derivatives as effective lipoxxygenase inhibitors. *Chemical Papers* 72(11):2769-2783. (I.F.-1.6)
16. Yasir M, Singh J, **Tripathi MK**, Singh P, Shrivastava R (2017) Green Synthesis of Silver Nanoparticles Using Leaf Extract of Common Arrowhead Houseplant and Its Anticandidal Activity. *Pharmacognosy Magazine* 13(52):840-844. (I.F.-1.5)
17. **Tripathi MK**, Yasir M, Singh P, Tayubi IA, Gupta R, Shrivastava R (2016) Toxic effect of chemicals dumped in premises of UCIL, Bhopal leading to environmental pollution: An *In-Silico* Approach. *Asian Pacific Journal of Tropical Diseases* 6(4): 284-290. (I.F.-0.7)
18. Shrivastava R, Yasir M, **Tripathi MK**, Singh P (2016) *In silico* interaction of methyl isocyanate with immune protein responsible for *Mycobacterium tuberculosis* infection using molecular docking. *Journal of Toxicology & Industrial health* 32(1): 162-167. (I.F.-1.7)
19. Singh P, Yasir M, **Tripathi MK**, Shrivastava R (2016) A review on in vitro screening assay for inhibitory effect against venom enzymes using medicinal plants. *Toxicology International* 23(3):207-211.
20. **Tripathi MK**, Yasir M, Gurjar VS, Bose P, Dubey A, Shrivastava R (2015) Insights from the molecular docking of hydrolytic products of Methyl Isocyanate (MIC) to inhibition of human immune proteins. *Interdisciplinary Sciences: Computational Life Sciences* 7(3): 287-294. (I.F.-1.5)

21. Yasir M, **Tripathi MK**, Singh P, Prakash V, Sarkar R, Shrivastava R (2015) Efficacy of natural inhibitors from *Glycosmis pentaphylla* against protein kinase C: An *In silico* approach to combat skin cancer. *Oxidation Communications* 38(1):114-121. (I.F.-0.5)
22. Yasir M, Singh P, **Tripathi MK**, Tayubi IA, Shrivastava R (2015) Antioxidant and antifungal activity of *Glycosmis pentaphylla* roots against dermatophytes and yeast-like fungi responsible for various skin ailments. *Oxidation Communications* 38(4):1622-1631. (I.F.-0.5)

#### Book Chapters:

1. **Tripathi MK**, Sharma S, Singh TP, Ethayathulla AS, Kaur P (2021) Computational Intelligence in Drug Repurposing for COVID-19. *Computational Intelligence Methods in COVID-19: Surveillance, Prevention, Prediction and Diagnosis*. 273-294 (DOI:10.1007/978-981-15-8534-0\_14)
2. Sharma P, **Tripathi MK**, Shrivastava SK. (2020) Cholinesterase as a drug target for drug development in Alzheimer's disease. *Methods in Molecular Biology*. 257-256 (ISBN No:978-1-0716-0162-4)
3. **Tripathi MK**, Sinha J, Shrivastava SK, Kumar D. (2019) Bioinformatics in skin cancer: A system biology approach to understanding the molecular mechanisms and it's regulation. *Skin Ageing and Cancer*.101-11. (ISBN No.: 978-981- 13-2540-3).

#### Patent Filed:

1. Asthana RK, Singh U, Shrivastava SK, **Tripathi MK**. (2020) A chemical fingerprinting of a potent fraction from a cyanobacterium *Arthrospira platensis* through HR-LC/MS and in silico molecular docking: Identification of an antifungal (arachidonoyl dopamine) and anti-HIV as well as antibacterial (fluocinolone) biomolecules (BT/BPFC/04/209/2020-PID).

#### Conference Proceedings:

1. Singh P, Yasir M, **Tripathi MK**, Shrivastava R (2016) Review: Anticancer perspectives of green silver nanoparticles: In proceedings of futuristic scope in Biotechnological advancement and allied instrumentation organised by Amity University, Raipur, Chhattisgarh (28-29 July 2016). 111-115 (ISBN: 9789352670888).
2. Shrivastava R, Singh P, Yasir M, **Tripathi MK**, (2016) Lipase-Catalyzed transesterification for biodiesel production from vegetable oil: A Review. In proceedings of World congress on applied science engineering & technology (WCASET16) organised by IFERP (02-03 January 2016): 59-61. (ISBN: 9788192958002).
3. Shrivastava R, **Tripathi MK**, Yasir M, Singh P, Tiwari A (2015) Molecular docking study to investigate role of toxic chemicals dumped in the UCIL, Bhopal in degradation of human immune protein. In proceedings of International Conference on Pharmaceutical, Medical & Environmental Health Sciences organised by ICPhaeME-PUNE (29 March 2015): 39-42. (ISBN: 9789382702849).
4. Singh P, Yasir M, **Tripathi MK**, Shrivastava R (2014) A Review: Biomarkers for Glioblastoma using proteomics studies. In proceedings of the All India Seminar on Recent Advances in Biotechnology and Human Health Care organized by The Institution of Engineers Bhopal (29-30 March 2014): 47-51. (ISBN: 9783330041233)

### **Conference and Scientific Presentations:**

1. Presented a poster entitled "*Identification of potential inhibitors targeting cholinesterase: an in silico and in vitro approach*" in International conference Basel Life-2019 organized by EMBO-Basel Life, at Basel, Switzerland (09-12 September 2019).
2. Presented a paper entitled "*Computational study for identification of potential inhibitors targeting acetylcholinesterase (AChE)*" in International conference on Innovations and Translational Dimensions: Food, Health and Environmental Biotechnology (Biosangam 2018) organized by Department of Biotechnology, Motilal Nehru National Institute of Technology Allahabad (09-11 March 2018).
3. Presented a paper entitled "*Lipase-Catalyzed transesterification for biodiesel production from vegetable oil: A Review*" in World congress on applied science engineering & technology (WCASET-16)" organised by IFERP (02-03 January 2016).
4. Presented a paper entitled "*Molecular docking study to investigate role of toxic chemicals dumped in the UCIL, Bhopal in degradation of human immune protein*" in 23<sup>rd</sup> IRF International conference on pharmaceutical, medical & Environmental health sciences" organised by ICPhaeME-PUNE (29 March 2015).
5. Presented a paper entitled "*Inhibition of human immunoproteins against pulmonary tuberculosis by Methyl Isocyanate using computational biology approach*" in All India Seminar on Recent Advances in Biotechnology and Human Health Care organized by The Institution of Engineers Bhopal (29-30 March 2014).
6. A poster entitled "*Molecular modelling of methyl isocyanate, its hydrolytic products and residues dumped in (UCIL) Bhopal with human immune proteins*" in International conference on Health, Environment & Industrial Biotechnology (Biosangam 2013) organized by Department of Biotechnology, Motilal Nehru National Institute of Technology Allahabad (21-23 Nov 2013).
7. A poster entitled "*In-silico toxicity analysis of MIC against pulmonary tuberculosis*" in National seminar on Science for shaping the future of India organized by Indian Science Congress Association Bhopal Chapter & MPCST Bhopal (30-31 Oct 2012).

### **Workshop and Training Attended:**

1. Participated in EMBL-EBI Workshop on "*Analysis of Genome Scale Data from Bulk and Single Cell Sequencing*" organized by EMBL-EBI and National Institute of Biomedical Genomics, Kalyani, Kolkata (19-23 November 2018).
2. Participated in Workshop on "*Emerging Trends in Drug Design and Molecular Modelling*" organized by IIT-BHU, Varanasi (19-21 July 2017).
3. Participated in Short Term Training Programme on "*Frontiers of material science and technology*" organized by Maulana Azad National Institute of Technology, Bhopal (02-06 May 2016).
4. Participated in International Workshop on "*Softcomputing and Applications (ISCA-15)*" organized by Indian Statistical Institute Kolkata and South Asian University New Delhi (25-27 March 2015).

5. Participated in Short Term Training Programme on “*Synthesis Characterization and Application of Biomaterial*” organized by Maulana Azad National Institute of Technology, Bhopal (25-29 June 2014).
6. Participated in interdisciplinary workshop on “*Advanced Tools for Materials Characterizations*” organized by Department of Chemical Engineering & Biotechnology & MSME, Maulana Azad National Institute of Technology, Bhopal (1-5 April 2013).
7. Participated in Short Term Training Programme on “*Bioinformatics for Biologists*” organized by Department of Chemical Engineering & Biotechnology, Maulana Azad National Institute of Technology, Bhopal (18-22 March 2013).
8. Participated in National seminar on “*Deployment and Collaboration of SPSS Reports and Models*” organized by Department of Management studies, Maulana Azad National Institute of Technology, Bhopal (15 Dec 2012).
9. Participated in 2 Week Workshop on “*Introduction to Research Methodologies*” organized by IIT Bombay in Association with Maulana Azad National Institute of Technology, Bhopal (25 June-4 July 2012).
10. Participated in the National seminar and workshop on “*Metabolic Networks and Drug Designing*” organized by MMV, Banaras Hindu University, Varanasi (28-30 Nov 2008).
11. Participated in National Seminar on “*Intellectual Property Right Plant Varieties and Genome Conservation*” Organized by Dr. S.P.M. Govt Degree College Phaphamau Allahabad (14-15 Oct 2006).

#### **Extra-Curricular Activities**

1. Worked as Repertoire in 6th International Conference of International Academy of Physical Sciences on (Advances in Chemistry and Chemical Technology) organized by IIT (BHU) Varanasi (18-20 December 2020).
2. Worked as Technical Committee Member in Short Term Training Programme on “Frontiers of material science and technology” organized by Maulana Azad National Institute of Technology, Bhopal (02-06 May 2016).
3. Worked as Technical Committee Member in All India seminar on “Recent trends of Nanotechnology in Environmental and Biological Applications” organized by The Institution of Engineers Bhopal (22-23 Nov 2014).
4. Worked as Committee Member in Short Term Training Programme on “Synthesis Characterization and Application of Biomaterial” organized by Maulana Azad National Institute of Technology, Bhopal (25-29 June 2014).
5. Worked as Committee Member in All India Seminar on “Recent Advances in Biotechnology and Human Health Care” organized by The Institution of Engineers, Bhopal (29-30 March 2014).

#### **Areas of Research Interest:**

- Chemoinformatics & Drug designing.
- Molecular dynamics simulation studies.
- Protein modelling and structure function relationship.
- Structural Bioinformatics.
- Network & System biology for protein-protein interaction networks.
- NGS data analysis.

## **References:**

**1. Prof. Rahul M Shrivastava**

Department of Biological Science & Engineering  
Maulana Azad National Institute of Technology,  
Bhopal, Madhya Pradesh, Pin-462003  
Mobile No: +91-9981753702  
Email: shrivastavarm1972@gmail.com, shrivastavarm@manit.ac.in

**2. Prof. Sushant Kumar Shrivastava**

Department of Pharmaceutical Engg & Technology  
Indian Institute of Technology  
Banaras Hindu University  
Varanasi, Uttar Pradesh, Pin-221005  
Mobile No: +91-9452156527  
Email: skshrivastava.phe@iitbhu.ac.in

**3. Prof. Punit Kaur**

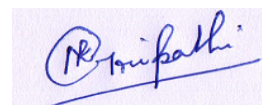
Department of Biophysics  
All India Institute of Medical Sciences  
New Delhi, Pin-110029  
Mobile No: +91-99100 26423  
Email: punitkaur1@hotmail.com

**4. Dr. Abhigyan Nath**

Medical Biotechnology Division,  
Department of Biochemistry,  
Pt. Jawahar Lal Nehru Memorial Medical College  
Raipur, CG-492001  
Mobile No: +91-9956015187  
Email: abhigyannath01@gmail.com

## **Declaration:**

I hereby declare that all information furnished above is true to the best of my knowledge and the document in support of the information will be forwarded whenever it required.



**(Manish Kumar Tripathi)**