

# Dr. Kriti Tyagi

Assistant Professor of Microbiology

Nationality: Indian

Location: New Delhi, India

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## PROFESSIONAL QUALIFICATIONS

### 2010 – 2015 | PhD (Biotechnology)

All India Institute of Medical Sciences, New Delhi

### 2007 – 2009 | M.Sc. (Biotechnology)

All India Institute of Medical Sciences, New Delhi

### 2004 – 2007 | B.Sc. (Microbiology)

University of Delhi, Delhi

UGC JRF/NET 2008 | CSIR JRF-NET 2009 | DBT JRF 2009

## DIPLOMAS AND CERTIFICATIONS

### 2015 | PG Diploma (IPR)

-NALSAR University, Hyderabad

## CAREER PROFILE

**Assistant Professor** | Gargi College, Department of Microbiology, University of Delhi | **Jul 2017 – till date**

**Guest Lecturer** | Swami Shraddhanand College, Department of Microbiology, University of Delhi | IGNOU, B.Sc. Life Sciences Laboratory, LSE-4 course. | **Sept 2016 – Apr 2017.**

**Assistant Professor** | Sri Venkateswara College, Department of Biochemistry, University of Delhi | B.Sc. courses Biochemistry & Life Sciences | PG Diploma Molecular & biochemical Technology | **Jan 2016 – Sept 2016.**

## AREAS OF INTERESTS

- Molecular Parasitology
- Host-Parasite Interaction
- Zoonotic Diseases
- Infectious Diseases

## ASSOCIATION WITH PROFESSIONAL BODIES

- Life Member, Microbiologists Society, India (MSI) & and Coordinator of MSI Delhi Unit
- Life member, Association of Microbiologists of India (AMI).
- Coordinator, MSI Delhi Unit (2022).

### Doctoral Thesis | All India Institute of Medical Sciences, New Delhi.

**PI:** Dr Y.D Sharma, Retd. Prof. & Head, Department of Biotechnology.

**Research Title:** *Functional Characterization of Plasmodium Tryptophan rich Antigens.*

-Focused on deciphering the functional aspects of malaria parasite *P. vivax* tryptophan-rich proteins (PvTRAGs) which have an unusually high percentage of tryptophan content by localization, protein interaction studies, and making transgenics in a heterologous system.

### M.Sc. Dissertation | All India Institute of Medical Sciences, New Delhi.

**PI:** Dr Y.D Sharma, Retd. Prof. & Head, Department of Biotechnology.

**Research Title:** *Cloning, expression, and purification of Plasmodium knowlesi tryptophan-rich proteins PkTRAg 38.3, PkTRAg 41, PkTRAg 81.6.*

-Focused on characterizing Tryptophan rich proteins of Plasmodium knowlesi, a monkey malaria parasite which is now recognized as an emerging fifth human malaria species capable of causing a fatal form of zoonotic diseases

### Summer Project | Institute of Genomics and Integrative Biology, New Delhi.

**PI:** Dr. Mitali Mukerji Former Chief Scientist E

**Research Title:** *Identification of Polymorphic Alu elements in Human genome.*

-Focused on the identification of SNPs in Alu elements, which are members of the short interspersed nucleotide elements (SINEs) family in the human genome by DNA sequencing

## TECHNICAL EXPERTISE

Mammalian Cell Culture | Bacterial Transformation | Protein Expression & Purification | Antibody Production & Purification | SDS-PAGE | Microbiological Testing | Immunology | Western Blot Analysis | Immunopulldown Assays | Yeast Two Hybrid Assay | ELISA | PBMC Isolation | Gene Cloning | PCR & DNA Sequencing | DNA & RNA Isolation | cDNA Synthesis | Genomic Library Construction & Screening | Plasmodium Falciparum Culture | Fluorescence Microscopy | GFP Localization of Proteins | Phage display

## STUDENT RESEARCH PROJECT

Hormonal influence on Microflora across the menstrual cycle and its effect on female health. Selected under Pathfinder projects (2019- 2020) under “The Star College Scheme of the Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India.

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## SUBJECTS TAUGHT

Advances in Microbiology, Inheritance Biology, Virology, Molecular Biology, Industrial Microbiology, Instrumentation and Bio-techniques, RDT, Food and Dairy Microbiology, Medical Microbiology, Metabolism and physiology, Science & Society, Skill enhancement course: PCR and its application, Microbes in Health and Hygiene, Microbes in Infectious diseases, and Microbial world diversity.

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## WORK PROFILE

- Member, International Relations Committee, RDC, Gargi College
- Member, Placement cell, Gargi College
- Member for dept. committee: M.A.S.I.F, NAAC, GERMS
- Evaluation, mentoring
- Question paper setting (Examiner)
- Organizing Educational field visits
- Contributor: Virology (NEP) Design and Development Of Curriculum
- Convening and coordinating for webinars, seminars, and colloquiums viz:
  - Co-Convenor: “Fighting Pandemics with Artificial Intelligence”, Dr.Tavpritesh Sethi, IIIT-Delhi. 25th May 2020.
  - Coordinator & co-convener: Enkindle - **A three-day International Colloquium on Microbes, Environment, and Science Communication.** February 26, 27, and March 1, 2021. (<https://gargicollege.in/wp-content/uploads/2018/06/Enkindle-2021.pdf> ).
  - Convener: A remarkable journey of Malaria parasites, between two diverse hosts. Speaker: Dr. Abhisheka Bansal, School Of Life Sciences, JNU. Platform: Microbiologists Society of India. June 26, 2021.
  - Convener: Luminescence: A career counseling session, Speaker: Mr. Lalit Pankaj, Founder, Future-ready with Lalit, Co-founder FGSI, G.E.R.M.S, The Microbiology association of Gargi College. August 23, 2021.

## PUBLICATIONS

- Soumya, Shashi Chawla, Vandana Gupta, Kriti Tyagi, 2024. Trends in Bacterial cancer therapy. (under process).
- **Kriti Tyagi** & Shashi Chawla. Chapter 6 - The CRISPR-Cas technology: trends in healthcare, CRISPR-Cas System in Translational Biotechnology, Elsevier Academic Press, 2023, Pages 109-130, ISBN 9780323918084, <https://doi.org/10.1016/B978-0-323-91808-4.00012-2>. (<https://www.sciencedirect.com/science/article/pii/B9780323918084000122>).
- **Kriti Tyagi**, Kavita Vasdev. “The Science of the Mighty ‘Small’, Nanobiotechnology in Human Well Being.” International Journal of Bio-Technology and Research 10, no. 1 (2020): 41–48. ISSN(P): 2249–6858; ISSN(E): 2249–796X.

- **Tyagi K**, Gupta D, Saini E, Choudhary S, Jamwal A, Alam MS, Zeeshan M, Tyagi RK, Sharma YD. Recognition of Human Erythrocyte Receptors by the Tryptophan-Rich Antigens of Monkey Malaria Parasite *Plasmodium knowlesi*. PLoS One. 2015 Sep 22;10(9):e0138691. doi: 10.1371/journal.pone.0138691. PMID: 26393350; PMCID: PMC4579084.
- **Tyagi K**, Hossain ME, Thakur V, Aggarwal P, Malhotra P, Mohmmmed A, Sharma YD. Plasmodium vivax Tryptophan Rich Antigen PvTRAg36.6 Interacts with PvETRAMP and PvTRAg56.6 Interacts with PvMSP7 during Erythrocytic Stages of the Parasite. PLoS One. 2016 Mar 8;11(3):e0151065. doi: 10.1371/journal.pone.0151065. PMID: 26954579; PMCID: PMC4783080.
- Zeeshan M, **Tyagi K**, Sharma YD. CD4+ T cell response correlates with naturally acquired antibodies against Plasmodium vivax tryptophan-rich antigens. Infect Immun. 2015 May;83(5):2018-29. doi: 10.1128/IAI.03095-14. Epub 2015 Mar 2. PMID: 25733522; PMCID: PMC4399064.
- Zeeshan M, Tyagi RK, **Tyagi K**, Alam MS, Sharma YD. Host-parasite interaction: selective Pv-fam-a family proteins of Plasmodium vivax bind to a restricted number of human erythrocyte receptors. J Infect Dis. 2015 Apr 1;211(7):1111-20. doi: 10.1093/infdis/jiu558. Epub 2014 Oct 13. PMID: 25312039.

### Lab Manual

- **Kriti Tyagi** and Manpreet Kaur Rawal, Lab II – Microbiology, Genetics, Molecular Biology & rDNA Technology, Food and Dairy Microbiology. Course code:36424, Alagappa University Distance Education, Vikas Publishing House Pvt Ltd, New Delhi, India. (2019). ISSN: 4000020054.

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### **FELLOWSHIPS & AWARDS**

- EMBL Corporate Partnership Programme Registration Fee Waiver to attend BioMalPar XIII: Biology and Pathology of the Malaria Parasite, Heidelberg, Germany, 2017
- International travel grant from the Department of Science and Technology, Govt. of India, 2015 to attend the Plasmodium vivax malaria international conference, Bali.
- Senior Research Fellowship (SRF) by Council of Scientific and industrial research, Govt. of India, (2012-2015)
- Junior Research Fellowship (JRF) by Council of Scientific and Industrial Research, Govt. of India, (2010-2012)
- Qualified Junior research fellowship, UGC, India (2009)
- Qualified Junior research fellowship DBT, Govt. of India, (2009)
- Scholarship for M.sc Biotechnology from the Department of Biotechnology, Govt. of India (2007-2009).

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### **WORKSHOPS & CONFERENCES**

- Poster presentation on 'Human skin microbiome as an indicator of various skin conditions during different phases of menstruation cycle: A preliminary study', International Conference cum CME on Tuberculosis, Miranda House, University of Delhi, 4th May 2023.

- Course Workshop on “Science and Society”. Mahatma Hansraj Faculty Development Centre, A Centre of MoE, Govt. of India Under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching, organized by Value Addition Courses Committee (University of Delhi). 20<sup>th</sup> October 2022.
- Workshop, "Understanding Public Health from an Interdisciplinary Perspective". Delhi Effective Education & Pedagogy Cluster (DEEP-C), October 2021.
- Science Academies'-Science Leadership Workshop, June, 2020.
- Lecture Workshop ‘#ZeroWaste’, organized by DAV College, Bathinda, Central University of Punjab, and Indian National Young Academy of Sciences, New Delhi between, June 2020.
- Preparatory School on Population Genetics, International Centre for Theoretical Sciences, TIFR, Bengaluru, India, February 2019.
- BioMalPar XIII: Biology and Pathology of the Malaria Parasite, EMBL Heidelberg, Germany, May 2017, poster and flash talk presentation.
- Research poster presentation, ‘5th international conference of research on Plasmodium vivax malaria’, Bali, 2015.
- National symposium SYSCON 2014 “Recent advances in biological sciences” AIIMS, New Delhi, 2014.
- International Scientific Meeting “Recent Developments in Malaria Research ICGEB, New Delhi”, 2013 and 2010.
- National Symposium on ‘IMMUNITY TO INFECTION’ by Society of Young Scientists, at All India Institute of Medical Sciences, 2012.
- International Symposium of Microbiology organized by Association of Microbiologists of India, 2007.

#### **FACULTY DEVELOPMENT PROGRAMMES**

- One Week Online National Faculty Development Program titled "Personal Finance and Tax Planning (An Interdisciplinary approach)", (PMMMNMTT). Ministry of Education, November 2021.
- FDP, ‘Introduction to Python Programming’, ICT Academy, 27th sep-1st October 2021.
- FDP, ‘Fundamentals of AI’, ICT Academy, 2th-06th August 2021.
- Biosafety, Bioethics, and IPR. Dept of Microbiology, Ram Lal Anand College, 24th-28th August 2020.
- Certificate Course on Digital Teaching Techniques, July 2020, ICT Academy.
- Quality Assurance in higher education institutes: Reorienting Teaching Learning paradigm', March 2019, RLA College DU.
- Mentoring the Teacher-Mentors: Capacity Building Programme, a NAAC-sponsored National Seminar. Internal Quality Assurance Cell (IQAC) Gargi College.