



PERSONAL INFORMATION

Dr. Rajat Prakash

PhD / CICP / LMNSC / QMSA.

Medical Microbiologist
(Certified, ISO15189:2012 / 2022 QMS & IA)

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AREA OF INTEREST

- Quality management system & IA
- DR-TB; DR-EPTB
- Biosafety (Level 4 & 3)
- Hospital Infection Control
- Air-Borne Infection Control
- Metabolomics and Proteomics

SUMMARY:

- A recognized U.G. academic faculty in National Medical Commission.
- More than eight years of academic and research experience in field of diagnostic microbiology
- Certified Infection Control Professional.
- Certified Quality management and System auditor (ISO 15189:2022)
- Veteran of establishing three Biosafety level -2 Molecular / virology Laboratories.

WORK EXPERIENCE

INSTITUTION	POST HELD (TIME PERIOD)	JOB RESPONSIBILITIES
Maharishi Markandeshwar College of Medical Sciences and Research, Sadopur, Ambala	Assistant Professor (September 04, 2024 till date)	Academics and research
Graphic Era Institute of Medical Sciences, Dehradun	ASSISTANT PROFESSOR & LAB. SUPERVISOR November 11, 2023 till August 21, 2024	BSL-2 Lab, Serology, Virology and Immunology Laboratory.
Nootan Medical College and Research Centre, Visnagar, Gujarat	ASSISTANT PROFESSOR February 14, 2022 till November 07, 2023	Mycology Lab In charge, TB lab In charge, Academics for MBBS students
Government Doon Medical College, Dehradun	Research Scientist (January 21, 2021 till January 21, 2022)	Covid 19 RT-PCR facility, Biosafety and Biosecurity Officer, Quality manager, Academics (Paramedical), Mentorship in MD Thesis, COVID-19 Sequencing and Analysis of Sequencing Data
National Institute of Medical Sciences, Jaipur	ASSISTANT PROFESSOR (JULY 03, 2020 to January 18, 2021)	Establishment of BSL-2 / Covid-19 Lab, Lectures for MBBS, Nursing, BDS, Medical M.Sc Courses.
National Institute of Virology (Pashan Campus), Pune	Research Scientist B (24 th December 2012 to June 2013) /	Validation of BSL4 and BSL 3 Laboratory, Development of Elisa for KFD Virus

DEGREE	INSTITUTION / UNIVERSITY	Year of passing
Ph.D. (Medical Microbiology)	All India Institute of Medical Sciences New Delhi – 29	2019
Medical M.Sc. Microbiology	Kasturba Medical College Manipal University, Manipal	2009

Ph.D. Thesis Title: A study of urinary proteomic profiles in individuals suffering from Pulmonary and Extrapulmonary Tuberculosis from North India.

Chief Guide: Dr. Bimal Kumar Das, Professor, Department of Microbiology, All India Institute of Medical Sciences, New Delhi-29.

A. Guide for M.Sc. Microbiology Students

Served as a guide for dissertation of M.Sc. Microbiology student at Nootan Medical College and Research Centre, Visnagar in academic session 2023.

B. Lecture / Speech

- Delivered lecture as a guest speaker on “Air-Borne Infection Control in Tuberculosis” at Conference of Clinical Scientist on research in Basic Medical Sciences held on August 18, 2019.
- Guest speaker in conference; Vision 2025: Mission TB free India” held on February 23-24 2019 at Dr. S.N. Medical College, Jodhpur.

B. Gene Bank Submission

Tuberculosis: 06 sequences *M.tuberculosis rrs* gene sequences submitted and accession nos. obtained from the Genbank. MF540622 to MF540627

ACADEMIC CONTRIBUTION

C. Publications

- 1) Shalabh Jauhari, Shekhar Pal, Mohit Goyal, **Rajat Prakash**, Deepak Juyal. Bacteriological and Antimicrobial Sensitivity Profile of Burn Wound Infections in a tertiary Care Hospital of Uttarakhand. International Journal of Current Research and Review. Vol12, issue 20, June 2020, 30-36.
- 2) Shalabh Jauhari, Shekhar Pal, **Rajat Prakash**, Deepak Juyal. Absence of *mecA* gene in methicillin resistant *Staphylococcus aureus*: A tertiary care centers perspective. Annals of International Medical and Dental Research, Vol 6, Issue 4.
- 3) Shekhar Pal, Deepak Juyal, Shalabh Jauhari, Shekhar Pal, **Rajat Prakash**, Shweta Thaledi. Sars-Cov2: Origin, transmission, prevention and mitigation. Annals of International Medical and Dental research. Vol 6 (5).
- 4) Vikrant Negi, Monika Pathania, **Rajat Prakash**, Deepak Juyal, Muneesh Kumar Sharma, Shekhar Pal. Prevalence and Antibigram Pattern of *Salmonella enterica* Serotypes in Garhwal Region: First Report from Foothills of Himalayas; Ahead of Print, 2018.
- 5) Deepak Juyal*, Munesh Sharma, Vikrant Negi, **Rajat Prakash**, Neelam Sharma. *Pseudomonas aeruginosa* and Its Sensitivity Spectrum in Chronic Suppurative Otitis Media: A Study from Garhwal Hills of Uttarakhand State,

India. *Indian Journal of Otology*, Volume 23, Issue 3, July-September 2017; 180-18.

- 6) H.H.G. Gautam, U.B. Singh, R. Lodha, S. Kabra, **R. Prakash**, R. Jain. Point of care urine Lipoarabinomannan antigen detection for diagnosis of tuberculosis in Pediatric population, *International Journal of Infectious Diseases*, Dec 2016.
- 7) Shekhar Pal, Deepak Juyal, Shamanth Adekhandi, Munesh Sharma, **Rajat Prakash**, Neelam Sharma, Amit Rana, Ashwin Parihar. Mobile phones: Reservoirs for the transmission of nosocomial pathogens. ; *Advanced Biomedical Research*, 2015, 4, 144
- 8) **Rajat Prakash**, Shekhar Pal, Neelam Sharma, Shamanth Adekhandi, Deepak Juyal, Vishal Gaurav Diversity of uropathogens and their resistogram in diabetic and non-diabetic patients in sub Himalayan region of Uttarakhand, India: A case control study. *International Journal of Medicine and Public Health*, Jan-Mar 2014, Vol 4, Issue 1
- 9) Deepak Juyal, Vikrant Negi, Munesh Sharma, Shamanth Adekhandi, **Rajat Prakash**, Neelam Sharma. Significance of fungal flora in chronic suppurative otitis media. *Annals of Tropical Medicine and Public Health*, Mar-Apr 2014, Vol 7, Issue 2.
- 10) **Rajat Prakash**, Deepak Juyal, Vikrant Negi, Shekhar Pal, Shamanth Adekhandi, Munesh Sharma, Neelam Sharma. Microbiology of Chronic Suppurative Otitis Media in a Tertiary care setup of Uttarakhand state, India. *North American Journal of Medical Sciences*; April 2013; Volume 5, Issue 4; 282-87.
- 11) Deepak Juyal, **Rajat Prakash**, Shamanth A. Shanakarnarayan, Munesh Sharma, Vikrant Negi, Neelam Sharma. Prevalence of non-fermenting gram negative bacilli and their *in vitro* susceptibility pattern in a tertiary care hospital of Uttarakhand: A study from foothills of Himalayas. *Saudi Journal for Health Sciences* - Vol 2, Issue 2, May-Aug 2013.
- 12) Shekhar Pal, **Rajat Prakash**, **Deepak Juyal**, Neelam Sharma, Amit Rana, Sandeep Negi; Baseline Widal titre among healthy individuals of hilly areas of Uttarakhand.; *Journal of Clinical & Diagnostic Research*, March 2013; 7 (3), 437-440.
- 13) Deepak Juyal, Shamanth A.S., Shekhar Pal, Munesh Sharma, **Rajat Prakash**, Neelam Sharma; Prevalence of ineludible Clindamycin resistance among Staphylococci in a Tertiary Care Hospital – A study from Garhwal hills of Uttarakhand. Accepted in *Journal of Clinical & Diagnostic Research*, January 2013, 7 (1); 61-65.

- 14) Shashidhar Vishwanath, Chiranjay Mukhopadhyay, **Rajat Prakash**, Suresh Pillai, Kailesh Pujary and Parul Pujary: Chronic Suppurative Otitis Media: Optimizing Initial Antibiotic Therapy in a tertiary care centre. Indian Journal of Otolaryngology and Head and Neck Surgery, September 2011, 64(3):285–289.
- 15) Vandana KE Mukhopadhyay C, Rau NR, Ajith V, **Rajath P.** Native valve endocarditis and femoral embolism due to *Granulicatella adiacens*: a rare case report; Brazilian Journal of Infectious Disease 2010;14(6):634-636
- 16) Vandana Kalwaje Eshwara, Chiranjay Mukhopadhyay, Savitha Mohan, **Rajat Prakash**, Ganesh Pai; Two unique presentations of *Achromobacter xylosoxidans* infections in clinical settings; Journal of Infection in Developing Countries; February 2011; 5(2):138-141.

TECHNICAL EXPERTISE

A. BIOSAFETY AND BIOSECURITY

- ☞ Design, planning, validation and commissioning of Biosafety level 2 / 3 highest containment facility as per the risk assessment.
- ☞ Handling CL-4 / 3 pathogens in maximum and highest containment facilities.

B. PROTEOMICS AND BIOMARKER IDENTIFICATION

- ☞ Gel based and Gel free protein estimation, quantification identification and data acquisition through high resolution liquid chromatography-based MS/MS

C. MYCOBACTERIOLOGY

- ☞ Quality assured laboratory-based diagnosis of DS/DR/MDR/Pre-XDR/XDR Pulmonary and Extra-Pulmonary Tuberculosis as recommended under Stop TB Partnership (World Health Organization) and National Tuberculosis Elimination Program (NTEP).

Microscopy

- ☞ AFB smear microscopy with Ziehl-Neelsen Staining and Fluorescent staining (recommended under Global Laboratory Initiative, Stop TB Partnership, WHO and NTEP guidelines), Gabbets Staining.
- ☞ Vital and differential lipid staining for detection and quantification of live *Mycobacterium tuberculosis* (Prognostic Tests).

Phenotypic Culture and drug susceptibility test

- ☞ Nitrate Reductase Assay based Lowenstein-Jensen solid culture and drug susceptibility testing.

- ☞ Gold standard Mycobacterium Growth Indicator Tube (MGIT) semi-automated liquid culture and drug susceptibility test.

Genotypic identification and drug susceptibility test

- ☞ Cartridge based Nucleic acid Amplification Test including Xpert MTB / RIF, TruNAT (Policy guidelines and implementation),
- ☞ Line probe assay for first- and second-line drug susceptibility test.
- ☞ Diagnosis of Pulmonary and Extra pulmonary Tuberculosis by Real time PCR.
- ☞ *Isolation, identification, drug susceptibility test of Non-tubercular Mycobacteria and formulation of individualized regimen*

DNA fingerprinting

- ➔ Spacer oligonucleotide typing
- ➔ Variable Number of Tandem repeat typing
- ➔ RFLP / RAPD

D. SEPSIS

Identification and antibiotic susceptibility test by automated Blood Culture with BacT/ALERT, BACTEC 9120, Vitek-2, MALDI-TOF, Phoenix platforms, Biofire etc.

E. ANAEROBIC BACTERIOLOGY

- ☞ Laboratory based diagnosis of deep-seated infection of suspected anaerobic etiology by gas-pack anaerobic culture systems.

F. AEROBIC BACTERIOLOGY

- ☞ Clinical specimen collection, processing, antimicrobial sensitivity testing, reporting
- ☞ Staining techniques – Vital staining of bacteria, differential stain including Gram's stain, Albert's Stain, lipid staining etc.
 - ☞ Isolation, Biochemical Analysis and Drug Sensitivity pattern of non-fermenters *Burkholderia cepacia*, *Brucella spp.*, *Pseudomonas sp.*, *Achromobacter sp.*, *MRSA*, *VRSA*, *VRE*, *ESBL*, *MBL*, *KPC*, *AmpC* etc under *CLSI recommendation*.
 - ☞ Hanging Drop of stool for *V.cholerae*
 - ☞ Dark ground Microscopy for *Leptospira*.
 - ☞ Concentration Techniques for Stool.
 - ☞ Automated Identification and AST Systems (API 20 E, Phoenix Vn 5.45)

G. MYCOLOGY

- Collection of Clinical specimen processing, culture and reporting
- Fungal staining techniques including calcofluor white.

H. PARASITOLOGY

- Quantitative Buffy Coat (QBC) Malaria test, FALCIVAX-Rapid test for Malaria Multiple Reagent Strips for Urinalysis, HEMOSPOT for occult blood in stool.
- Enteric and tissue parasites.

I. VIROLOGY

- Design, validation and commissioning of biosafety level 2 / 3 facility.
- Development of quantitative Elisa against viruses.
- Well acquainted with CDC-WHO recommended protocols and techniques for the detection and diagnosis of SWINE FLU (H1N1) in community.
- Hepatitis B Profiling (ELISA and PCR based viral load quantification).

J. HOSPITAL INFECTION CONTROL PROGRAM

- Policy development and program implementation
- Antimicrobial stewardship, OT culture
- Develop fumigation / sterilization protocols of heavy burden areas of HCF.

TRAINING & CERTIFICATION

HOSPITAL INFECTION CONTROL

- Online Level -1 and level-2 certificate program in Infection Prevention and Control from October 08, 2019 till November 08, 2019 conducted by Medvarsity.

ACADEMICS

- CISP Orientation Programme conducted by Medical Education Unit at Nootan Medical College and Research Centre, Visnagar from July 16, 2019 till July 17, 2019.

PROTEOMICS

- LC-MS/MS Introductory training program at SCIEX, Centre of Excellence, DHR Holding India Pvt. Ltd. Gurgaon, India, from June 25th 2018 till June 27th 2018.
- Hands-on session on Orbitrap Fusion Tribrid Mass Spectrometer at Indian Institute of Technology- Mumbai, held on December 11th, 2017.

BIOSAFETY

- ☞ Preliminary BSL-3 training at National Institute of Virology, Pune held from January 11, 2011 till January 13, 2011.

STATISTICS

- ☞ National Workshop on Statistical Epidemiology, conducted by Department of Statistics, Manipal University from August 01, 2011 till August 05, 2011.

ADMINISTRATION

- ☞ Quality manager and Co-In charge of NIMS Hospital Advance Molecular Laboratory intended for SARS-CoV-2 RT-PCR.
- ☞ Member of admission committee of first year MBBS students during July-August 2019.
- ☞ Successful execution of the responsibility for smooth running of Central Clinical Laboratory at Nootan General Hospital under the supervision of Head of Department, Microbiology at Nootan Medical College and Research Centre, Visnagar, District Mahesana, Gujarat.
- ☞ In charge of Anaerobic laboratory section in Department of Microbiology at Veer Chandra Singh Garhwali Government Institute of Medical Sciences and Research.

ORAL PRESENTATION

1. **Rajat Prakash**, Vishakh C. Keri. Twist in the tale; A diagnostic Dilemma. ASM CME on “Antibiotic Resistance – Renewed Fears: April 2017.
2. Urvashi B. Singh, **Rajat Prakash**, Bhavna Maheshwari, Nupur Sharma, Anant Mohan, Randeep Guleria. Antigen Based Detection Where Nucleic Acid Amplification Test Fail For Diagnosis Of Extra-Pulmonary Tuberculosis. 41st Annual Conference of Indian Association of Medical Microbiologist, Microcon 2017

POSTER PRESENTATION

1. Urvashi B Singh, Anuj Bhatnagar, Hitender Gautam, Pooja Pandey, Bhavna Maheshwari, **Rajat Prakash**, Nupur Sharma, Santosh Kumar Verma. Improving MDR-TB Treatment Options: Identifying Phenotypic and Genotypic Resistance to Moxifloxacin and Pyrazinamide.
2. Urvashi B Singh, Anuj Bhatnagar, Hitender Gautam, Pooja Pandey, Bhavna Maheshwari, **Rajat Prakash**, Nupur Sharma, Santosh Kumar Verma.

Improving MDR-TB Treatment Options: Identifying Phenotypic and Genotypic Resistance to Moxifloxacin and Pyrazinamide.

3. Chitra Krishnan T.S, **Rajat Prakash**, Kiran Chawla, Vandana KE, Indira Bairy, Kasturba Medical College, Manipal University, Manipal, Karnataka. **Characterization and Antibigram of Non-Fermenting Gram Negative Bacilli in A Tertiary Care Centre** in 32nd National Conference of Indian Association of Medical Microbiologist, on “Clinical Microbiology: From Detection to Clinical Application”, held at AFMC, PUNE, from 25th – 28th October 2008.
4. **Rajat Prakash**, Savitha M, Chiranjay Mukhopadhyay, Indira Bairy. ***Achromobacter xylosoxidans subsp. denitrificans*: Two unique and rare case reports** in CME “Microbial Insights 2009” held at KMC-International Centre, Manipal, on 1st March 2009
5. **Rajat Prakash, Kailesh Pujary, Chiranjay Mukhopadhyay, Shashidhar V, Parul Pujary, Suresh P**: Clinico-Microbiological Evaluation of patients with Chronic Suppurative Otitis Media in 33rd. National Conference of Indian Association of Medical Microbiologist, held at JSS Medical College Mysore in November 2009.

CONFERENCE AND SEMINARS

1. “National Workshop on Statistical Epidemiology” conducted at Department of Biostatistics, Manipal University from 1st to 5th Aug, 2011.
2. XXXIVth National Conference of Indian Association of Medical Microbiologist, 24-28th Nov, 2010, held at Swabhum, Kolkata, India.
3. Workshop: Antimicrobial Susceptibility Testing held at JSS Medical College, Mysore from 21st to 22nd August 2010.
4. CME: Microbial Insights, March 2010, held at Department of Clinical Microbiology and Immunology, KMC – IC, Manipal.
3. XXXIIIrd National Conference of Indian Association of Medical Microbiologist, 3rd to 8th Nov, 2009, held at JSS Medical College, Mysore, India.
4. CME: Respiratory Infections and Microbes, conducted at Department of Microbiology, KMC, Manipal on 28th August, 2009.
5. XXXIIIrd National Conference of Indian Association of Medical Microbiologist, 21-25th Oct, 2008, held at Armed Forces Medical College, Pune, India.
6. CME: An update on Vaccines, XXXIIIrd National Conference of Indian Association of Medical Microbiologist, 21-25th Oct, 2008, held at Armed Forces Medical College, Pune, India.

7. Workshop: Human Genetics for Students: held at KMC-IC, Manipal from 13th to 15th April, 2007.

📄 Awarded **Silver Medal** for Academic Excellence in B.Sc. (Medical Microbiology) IIIrd year examination in year 2004-05 sessions of H.N.B. Garhwal University.

EXTRA-CURRICULAR ACTIVITIES

- 1) Awarded first prize in **Street Play** in inter college competition (UTSAV), organized by Manipal University in 2007.
- 2) Awarded first prize in **Eastern Non-Classical Group Dance** in MAHE inter college competition (UTSAV), organized by Manipal University in 2009.
- 3) Planning, organizing and hosting CME and Conferences.

RECOMMENDATIONS

REFERENCES

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DECLARATION

I, Rajat Prakash, hereby declare that the above stated information is correct to the best of my knowledge.



(DR. RAJAT PRAKASH)



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