

Dr. Priyadharshini Sekar

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EDUCATION

**Ph.D Medical Microbiology
(Faculty of Medicine)**
2015-2019 (Full time)
University of Madras

**M.Sc., Medical Microbiology
(Faculty of Medicine)**
2006-2009
SRM Medical College Hospital
& Research Centre, Chennai,
India

**Advanced Training Programme
in Laboratory Technology**
Aug 2005 – Jan 2006
Loyola Institute of Vocational
Education, Chennai, India.

B.Sc., Microbiology
2003 – 2006
SRM Arts and Science College,
(University of Madras),
Chennai, India

PROFESSIONAL EXPERIENCE (Diagnostic/Teaching/Research)

- **Research Assistant (Post, Ph.D)** – Microbiota RG, SIMR, University of Sharjah, UAE (*September 2020 – Current*)
- **Microbiologist** – COVID-19 testing lab, Central laboratory, RAK Hospital, UAE (*May 2020 – August 2020*).
- **Course instructor & course content developer** for e-course on **Gut microbiomics** and at www.instituteofnutrigenetics.in (*March 2019 – August 2020*).
- **PhD scholar (Bacteriology)** at Dept of Microbiology, Dr. ALM PG IBMS, University of Madras Chennai, India. (*March 2015 – November 2019*).
- **Consultant Microbiologist**, at Holy Diagnostic Center, Chennai, India. (*January 2014 – July 2018*).
- **Teaching (for post graduates) & Research Fellow** at Dept of Microbiology, Dr. ALM PG IBMS, University of Madras Chennai, India. (*November 2016 - April 2017*).
- **Senior & Junior Research Fellow (Immunology of Tuberculosis)** at Dept of Immunology National Institute of Research in Tuberculosis, Chennai, India. (*June 2011 - March 2014*).
- **Nine months of teaching experience for MBBS international students** in the capacity of **Lecturer** at Dept of Microbiology, SSR Medical College, Mauritius. (*September 2010 - May 2011*).

AWARDS AND GRANTS

2009 - **University FIRST RANK** in **M.Sc., Medical Microbiology**.

2006 - **University Rank 34th** in **B.Sc., Microbiology**.

2006 – **THIRD RANK for Proficiency in Microbiology** for the Academic year 2005-2006 in SRM Arts and Science College.

2011 - **INSPIRE fellow award**, awarded by DST, Ministry of Science and Technology, **India**.

2015 - **Third Best Paper Award** at SRM ARISE 2016

2016 – **ESCMID attendance grant** to attend the **Gut Microbiome 2016** conference at Manipal, Karnataka.

2016 - **ICOM travel award** from University of Madras for travel to **Amsterdam, Netherlands**, for presenting poster at the **ECCMID 2016** conference.

TECHNICAL SKILLS

➤ Medical Microbiology techniques including:

- ❖ General Microbiology – Microscopy, Staining procedures, Sterilization, Disinfection
- ❖ Bacteriology – Processing of clinical samples for cultivation and identification of bacteria, Antimicrobial sensitivity testing.
- ❖ Parasitology – Detection of ova & cyst from stool, Peripheral blood smear examination
- ❖ Mycology - Processing of clinical samples for identification of fungi and yeast.
- ❖ Serology & Virology techniques.

➤ Molecular Biology techniques including:

- ❖ PCR, Real Time Reverse Transcriptase -qPCR, Multiplex allele specific PCR
- ❖ Analysis of gene sequencing
- ❖ Plasmid isolation, Conjugation
- ❖ Cloning – Restriction enzyme digestion, Ligation, Transformation, Electroporation.
- ❖ Competent cell preparation
- ❖ Protein expression and purification
- ❖ SDS - PAGE, Western blotting
- ❖ Reverse line blot hybridization
- ❖ Cell culture techniques
- ❖ ELISA

➤ Animal handling techniques: Care, handling, and breeding of laboratory animals – mice, guinea pigs and rabbits. Administration of compounds to lab animals

➤ Computer skills:

- ❖ Microsoft office and its counterparts in MacIntosh – ability to use these tools to effectively create/compose/edit written materials; develop and deliver presentations; store/track/analyze data.
- ❖ Conversant with NCBI Blast, Primer designing softwares - PRIMEN, Gene tool, Cloning software - Clone manager.
- ❖ Knowledge of basics of bioinformatics for gene/ protein analysis.

DIAGNOSTIC/RESEARCH/ ACADEMIC LABORATORY MANAGEMENT SKILLS

- ❖ Maintenance of medical laboratory equipment performance by establishing quality standards.
- ❖ Developing operations, quality, and troubleshooting procedures
- ❖ Ensuring staff compliance.
- ❖ Certifying instrument performance and arranging equipment replacement, service, and repair.
- ❖ Maintenance of medical laboratory supplies inventory by checking stock to determine inventory level; anticipating needed supplies; placing and expediting orders for supplies; verifying receipt of supplies.

SOFT SKILLS

- ❖ Strong verbal and written communication.
- ❖ Ability to deconstruct complex theories/concepts, to effectively tutor students.
- ❖ Effective organizing, planning and execution of ideas/goals/ strategies.
- ❖ Readily adaptable to changes and ability to work with a diverse community.
- ❖ Critical thinking leading to development of new ideas or finding a solution to challenges.
- ❖ Leadership skills along with team effort to fulfill a target.
- ❖ Handling the pressure to meeting deadlines successfully.
- ❖ Languages: English, Hindi, Tamil.

PUBLICATIONS

- ❖ Banerjee K, Priyadharshini S, Krishnan P, Wattam AR, Roy S, Hays JP, Menezes GA . (2018). Whole genome sequence analysis of NDM-1, CMY-4, and SHV-12 coproducing *Salmonella enterica* serovar Typhimurium isolated from a case of fatal burn wound infection. *Infection and Drug Resistance*. 2018(11) 2491—2495.
- ❖ Sanjith Saseedharan, Manisa Sahu, Roonam Chaddha, Edwin Pathrose , Arun Bal, Pallavi Bhalekar, Priyadharshini Sekar, Padma Krishnan. (2017). Epidemiology of diabetic foot infections in a reference tertiary hospital in India. *Brazilian Journal of Microbiology*. 1517-8382(16)30058-2. doi:10.1016/j.bjm.2017.09.003
- ❖ Manisa Sahu, Priyadharshini Sekar, Revathy Ramalingam, Pallavi Bhalekar, Suguna E, Gnana Soundari Palani, Padma Krishnan, Godfred A. Menezes (2016). Prevalence of carbapenem resistant Gram negative bacilli harboring *blaNDM-1* gene isolated in a tertiary care hospital. *Current Research in Bacteriology*9(1) 9-16.
- ❖ Godfred A. Menezes and Priyadharshini S (2013). New Delhi Metallo- β -Lactamase (NDM-1): How real is the threat? *Internet Journal of Medical Update* 8(1) 1-3.
- ❖ Priyadharshini Sekar, Radha Madhavan, Arunagiri K, Menaka K, Sekar B (2012). Molecular characterisation of β -lactamase producing *Escherichia coli* and *Klebsiella pneumoniae* isolates with special attention to *blaCTX-M-15*. *Journal of Pharmaceutical and Biomedical Sciences* 25(25) 207-211.
- ❖ Godfred A. Menezes, Priyadharshini S and Cylma Menezes (2011). Nanoscience in diagnostics: A short review. *Internet Journal of Medical Update* 6(1) 16-23.

PRESENTATIONS IN CONFERENCES / WORKSHOPS / COURSES

- ❖ **Speaker**, on “Introduction to Gut microbiome” , at a two day intensive online course on translational nutrigenetics and nutrigenomics, conducted by Institute of Nutrigenetics on 1-2 August 2020.
- ❖ **Resource Faculty in the WHO fellowship program** in Diagnostic Microbiology conducted by WHO Regional Office for the Eastern Mediterranean (WHO-EMRO) and RAK Medical and Health Science University, UAE from 20th to 23rd Oct & 7th to 27th Nov, 2019.
- ❖ **Resource person (Speaker) for hands-on workshop-** 1st National RAKMHSU-Saqr Hospital Joint Symposium on Antimicrobial Choice and Resistance Update held on : 4th - 6th May 2018, at RAKMHSU auditorium/ Central Research Laboratory (CRL), *Ras Al Khaimah, UAE*.
- ❖ “Comparison of Fecal Carriage Rates of Extended Spectrum β -Lactamase (ESBL) and AmpC β -Lactamase Producing *Enterobacteriaceae* among Community based Healthy Individuals and Renal Transplant Patients”. Poster present at Gut Microbiome 2016 held between 21-22 October 2016 at KMC, Manipal, *Karnataka, India*.
- ❖ “A study indicating the possibility of horizontal transfer of *blaCTX-M* gene between uropathogenic and gut *Escherichia coli* in the human intestine”. Poster presented at 26th European Congress of Clinical Microbiology and Infectious Diseases (ECCMID 2016) held between 9-12 April 2016 at RAI *Amsterdam, Netherlands*.
- ❖ “Molecular characterization of ESBL and AmpC beta lactamase producing *Enterobacteriaceae* isolated in a tertiary care hospital, Chennai”. Oral Paper presented at 39nd National Conference of the IAMM – MICROCON 2015 held between 27-29, November 2015 at JIPMER, *Puducherry, India*.
- ❖ “Horizontal transfer of *blaCTX-M* gene between gut and pathogenic *E.coli* - A case report”. Prize Paper presented at A National level Conference in Clinical Microbiology - Advanced Research In Medical Science (ARISE- 2015) held between September 28- 29, 2015 at SRM Medical college hospital and research center *Kattankalathur, TN, India*.

- ❖ Screening of ESBL and AmpC Beta lactamases and molecular characterization of ESBLs in *Escherichia coli* and *Klebsiella pneumoniae*. Prize Paper presented at one day conference on Hospital Acquired Infection- A Challenge to clinicians 'HAICON 2009' held on 2nd May 2009 at Institute of Microbiology, Madurai Medical College, *Madurai, TN, India*.
- ❖ Screening of Amp C Beta Lactamases among Gram Negative Clinical Isolates from S.R.M Medical College, Hospital and Research Center. Poster presented at 32nd National Conference of the IAMM – MICROCON 2008 held from 21 – 25 October 2008 at AFMC, *Pune, India*.
- ❖ Analysis of Drug Resistance pattern of commonly isolated Gram Negative Bacteria at SRM Hospital, Kattankalathur. Poster presented at Symposium on drug resistance, held from March 11th to 12th 2008 at Sir Dorabji Tata Centre, IISc campus, *Bangalore*.
- ❖ Multi Drug Resistance isolates among common bacterial pathogens. Poster presented at South Zonal Conference of Medical Microbiologists (Sozocon- MICRO 2008) held on 19th January 2008 at Sri Manakula Vinayagar medical College and Hospital, *Pondicherry, India*.

SPECIALISED TRAINING ATTENDED

- ❖ **Next Generation Sequencing- Bioinformatics and Data Analysis** held at AU-KBC Research Centre, MIT Campus, Chrompet between 3-6 August 2016.
- ❖ **Training in Real Time PCR and LAMP** held at SRM Medical College on 29 Sept 2015.
- ❖ National **Workshop on Droplet Digital PCR** held by Bio-Rad laboratories at Delhi on 23 April 2013.
- ❖ Summer **Training in the Production and Quality Control of Rabies Vaccine and DTP group of vaccines** at **Pasteur Institute of India**, Coonoor, Nilgiris, TN, India from 18- 30 May 2009.
- ❖ **One year of posting in the Diagnostic Microbiology Laboratory in SRM Hospital**, Kattankalathur, TN, India, **as a part of post graduate studies**, from 2008-2009.
- ❖ **Training in Molecular Characterization of Extended Spectrum of Beta Lactamases** at Central Leprosy Teaching and Research Institute (**CLTRI**), Chengalpattu TN, India in March 2009.
- ❖ **Hands-on Summer Training Programme in Biomedical Laboratory Sciences** in the L&T Microbiology Research Center, at Medical Research Foundation, **Sankara Nethralaya**, Chennai. TN, India from 14th May to 30th May 2008.
- ❖ Training in **Phenotypic Detection of Amp C Beta Lactamase** at Pondicherry Institute of Medical Science (**PIMS**), Pondicherry TN, India in June 2008.
- ❖ **Training Programme in Clinical Microbiology involving the isolation and characterization of pathogens from different clinical samples in the Department of Microbiology**, Central Leprosy Teaching and Research Institute (**CLTRI**), **Chengalpattu, TN**, India from 12th Jan to 16th Jan 2006.
- ❖ **Basic Training in Recombinant DNA Technology and PCR** at **Genei**, Bangalore, Karnataka, India from 19th July to 23rd July 2005.
- ❖ **Observer ship Training in Electron Microscopy** at **Cancer Institute (WIA)**, Chennai TN, India in January 2005.
- ❖ **Observer ship Training in Cytogenetics** at **Cancer Institute (WIA)**, Chennai TN, India in January 2005.

