Dr. R. THENMOZHI M.Sc., Ph.D.

ADDRESS FOR COMMUNICATION

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ACADEMIC QUALIFICATION

Exam Passed	**:SSLC**
Board	:State Board
Year of Passing	**1996**
Main Subjects Taken	:Tamil, English, Maths, Science &Social
Percentage of Marks	: **87.2%**
Exam Passed	:**HSC**
Board	:State Board
Year of Passing	**1998**
Main Subjects Taken	:Tamil, English, Maths, Physics, Chemistry &Biology
Div./Class & % of Marks	:**70.5%**
JULY 1998 – APRIL 2001:	**B.Sc., Microbiology** URUMU DHANALAKSHMI COLLEGE OF ARTS & SCIENCE (Affiliated to Bharathidasan University, Tiruchirappalli)
Class Obtained**:**	I st Class – 63.6 %
JULY 2001 – APRIL 2003:	**M.Sc., Microbiology** THIAGARAJAR COLLEGE (Affiliated to Madurai Kamaraj University, Madurai)
Class Obtained**:**	I st Class – 71.36 %
APRIL 2005 – FEB 2011:	**Ph.D. Biotechnology (Reg. No. 1168)** UGC Research Fellow Department of Biotechnology Alagappa University Karaikudi - 630 004.

Title of Ph.D. Thesis:	Molecular characterization of virulence factors in clinical isolates of *Streptococcus pyogenes* and development of species specific SCAR marker.
Research Supervisor:	**Dr. S. Karutha Pandian** Professor and Head Department of Biotechnology Alagappa University Science Campus Karaikudi - 630 004.
JULY 2011 – JUNE 2014:	**Postdoctoral fellow** **UGC –Dr. D.S. Kothari** **Postdoctoral Fellow** Department of Microbiology, Bharathidasan University, Tiruchirappalli - 620 024.
Title of Postdoctoral Research work:	**Effect of Natural compounds on biofilm formation of clinical MRSA isolates.**
Research Supervisor:	**Dr. K. Natarajaseenivasan** Professor Department of Microbiology, Bharathidasan University, Tiruchirappalli - 620 024.
DEC 2015 – DEC 2018:	**Young Scientist** **DST-SERB** Department of Microbiology, Bharathidasan University, Tiruchirappalli - 620 024.
Title of Research work:	"In vitro analysis of antimicrobial peptides against potential biofilm forming Methicillin Resistant Staphylococcus aureus (MRSA) isolates"
Research Supervisor:	**Dr. N. Thajuddin** Professor Department of Microbiology, Bharathidasan University, Tiruchirappalli - 620 024.

PUBLICATIONS :

1. Comparative analysis of *emm* types, superantigen gene profiles and antibiotic resistance genes among *Streptococcus pyogenes* isolates from ocular infections, pharyngitis and asymptomatic children in south India (2013) Balaji K, Thenmozhi R, Prajna L, Dhananjeyan G & Pandian SK *Infect Genet Evol.* 19 105-12**.**
2. Emergence of methicillin-resistant, vancomycin-intermediate *Staphylococcus aureus* among patients associated with group A Streptococcal pharyngitis infection in southern India (2013) Gowrishankar S, Thenmozhi R, Balaji K and Pandian SK *Infect Genet Evol.* 14 383-389.
3. Virulence and multidrug resistance pattern of *Vibrio cholerae* O1 isolates from diarrhoeal outbreaks of South India during 2006-2009 (2013) Balaji K, Okonjo PA, Thenmozhi R & Pandian SK *Microb Drug Resist.* **19** 198-203.
4. Effect of subinhibitory concentrations of fluoroquinolones on biofilm production by clinical isolates of *Streptococcus pyogenes* (2013) Balaji K, Thenmozhi R & Pandian SK *Indian J Medl Res.* **137** 963-971.
5. Comparison of bacterial communities in the throat swabs from healthy subjects and pharyngitis patients by Terminal Restriction Fragment Length Polymorphism (2012) Balaji K, Thenmozhi R, Sundaravadivel M & Pandian SK *Appl Biochem Biotechnol.* **167** 1459–1473.
6. Characterization of biofilms in different clinical M serotypes of *Streptococcus pyogenes* (2011) Thenmozhi R, Balaji K, Rajesh K, Subba Rao T & Pandian SK *J Basic Microbiol.* **51** 1-9.
7. Development of species-specific primers for detection of *Streptococcus pyogenes* from throat swabs (2010) Thenmozhi R, Balaji K, Kanagavel M & Pandian SK *FEMS Microbiol Lett.* **306** 110-116.
8. Inhibition of Streptococcus pyogenes biofilm formation by coral-associated actinomycetes (2010) Nithyanand P, **Thenmozhi R**, Rathna J, Pandian SK. Curr Microbiol **60(6)** 454-60.
9. Antibiofilm activity of coral associated bacteria against different clinical M serotypes of *Streptococcus pyogenes* (2009) Thenmozhi R, Nithyanand P, Rathna J & Pandian SK *FEMS Immunol Med Microbiol.* **57** 284-294.

10. In vitro assessment of antimicrobial, antibiofilm and larvicidal a ctivities of bioactive nickel metal organic framework (2020) Prabhu R, Thenmozhi R, Thajuddin N, Suganthy N J Drug Delivery Science & Technology **56 Part A** 101560.
11. Polyherbal drug loaded starch nanoparticles as promising drug delivery system: Antimicrobial, antibiofilm and neuroprotective studies (2020) Prakashkumar N, Thenmozhi R, Thajuddin N, Rajasree S, Arivalagan P & Suganthy N. Process Biochemistry **92** 355-364.

AWARDS AND RECOGNITION

Ph.D.

- During doctoral study (2008-2010) **UGC- Research Fellowships in Sciences for Meritorious Students** has been awarded.

PDF

- From 2011 to 2014 **UGC- Dr. D. S. Kothari Postdoctoral Fellowship** has been awarded.
- From 2015 to 2018 **DST-SERB Young Scientist Fellowship** has been awarded.

TECHNIQUES KNOWN

- Basic techniques in Microbiology
- Enzyme Linked Immunosorbent Assay (ELISA)
- SDS-PAGE
- PCR
- Amplified Ribosomal DNA Restriction Analysis (ARDRA)
- Restriction Fragment Length Polymorphism (RFLP)
- Sequence analysis through BLAST
- Phylogenetic analysis

- Molecular Cloning

- Restriction Digestion

- Handling Confocal Laser Scanning Microscopy for biofilm analysis

- - Handling and Maintenance of animal model *Caenorhabditis elegans*

Sequences Submitted in GenBank

16S rDNA sequences of *Streptococcus pyogenes*

FJ662824, EU660333, FJ798740, FJ662826, FJ662827, EU660334, EU660335, EU660336, EU660337, EU660338, FJ662828, EU660340, FJ662829, FJ662830, FJ662831, FJ662832, FJ662833, FJ662834, FJ662835, FJ798741, FJ662836, FJ662837, FJ662838, FJ662839, FJ662840, FJ662841, FJ662842, FJ662843, FJ662844, EU660341, FJ662845, EU660342, FJ662846

emm* gene sequences of *Streptococcus pyogenes

EU624448, FJ662825, EU624449, FJ798729, EU636227, EU636228, EU636229, EU660374, EU660375, EU660376, EU660377, EU660378, FJ662847, FJ662848, FJ662849, FJ973476, FJ662850, FJ798734, FJ662851, FJ798732, FJ798735, FJ798733, FJ798736, FJ798737, FJ973477, FJ973475, FJ798738, FJ662852, FJ798739, EU660379, EU660380, FJ798730, FJ798731

sil* gene sequences of *Streptococcus pyogenes

FJ798707, FJ798708, FJ798709, FJ798710, FJ798711, FJ798712, FJ798713

prtF2* gene sequences of *Streptococcus pyogenes

FJ798714, FJ798715, FJ798716, FJ798717, FJ798718,

prtF1* gene sequences of *Streptococcus pyogenes

FJ798724, FJ798725, FJ798726, FJ798727, FJ798728

mef* gene sequences of *Streptococcus pyogenes

FJ798723, FJ798722, FJ798721

ermB* gene sequences of *Streptococcus pyogenes

FJ798720, FJ798719

Marker gene sequence of *Streptococcus pyogenes*

EU660382, GU207837

TEACHING EXPERIENCE

Handled theory (Microbiology and Molecular Genetics) and Lab courses (Microbiology, Molecular Genetics and Recombinant DNA Technology) for M.Sc., Biotechnology at Department of Biotechnology, Alagappa University during July 2004 – March 2005.

WORKING EXPERIENCE

Worked as Field Assistant in a DBT Project titled “Utilization of distillery wastes (Sludge & Effluent) for increased biomass and crop productivity for rural women development” during August 2003 to June 2004.

RESEARCH EXPERIENCE

Ph.D.

During my **5 years** of Ph.D. I have specialized in the field of medical microbiology where my pathogen of interest is *Streptococcus pyogenes*. In this pathogen I have analyzed the prevalence of its virulent genes (*emm*, *prtF1*, *prtF2* and *sil*). I have developed a species specific molecular marker for the identification of *S. pyogenes* from throat swabs (please refer my publication in FEMS Microbiology letters). Further the biofilm forming potential of this pathogen was analyzed and also the effect of glucose on biofilm formation was studied (Communicated in Journal of microbiology, In Press). To curb the biofilm production of *S. pyogenes* antibiofilm agents were screened from the coral *Acropora digitifera* since marine source are well known for their active secondary metabolites (please refer my publications in FEMS Immunology and Medical Microbiology and Current Microbiology). I have also gained experience in working with an animal model *Caenorhabditis elegans*, and its interaction with *Streptococcus pyogenes*. Apart from this I am well versed in all basic molecular biology techniques.

PDF (UGC-DSKPDF)

I have worked as a UGC-Dr. D. S. Kothari Postdoctoral fellow in the Department of Microbiology, Bharathidasan University. During my postdoctoral research work I have studied the effect of natural compounds on biofilm forming clinical MRSA isolates. The natural compounds showed appreciable amount of reduction in the biofilm formation of MRSA isolates. The result has been supported by SEM, CLSM analysis.

PDF (SERB-Young Scientist Award)

I have worked as a SERB Postdoctoral fellow in the Department of Microbiology, Bharathidasan University. During my postdoctoral research work I have studied the effect of antimicrobial peptides on biofilm forming clinical MRSA isolates. The peptides showed appreciable amount of reduction in the biofilm formation of MRSA isolates. The result has been supportedby SEM, CLSM analysis.

PAPERS PRESENTED

Presented a paper titled “Role of NiO and Ag doped NiO against biofilm forming Methicillin Resistant *Staphylococcus aureus* (MRSA) strains” in a international conference jointly organized by Vinayaka Missions Research Foundation and Gyeongsang National University on Nanoscience and Nanotechnology for Energy, Environment and Biomedical Aapplications held on 1st and 2nd October 2023.

Presented a paper titled “M protein typing of Indian group A Streptococcal isolates by PCR-Restriction fragment length polymorphism analysis” in 77th Annual Meeting of Society of Biological Chemists (India) on December 18-20, 2008 at Indian Institute of Technology, Chennai.

Presented a paper on “Screening and Molecular Identification of Group A Streptococcus Causing Rheumatic Fever in School Children” in 30th Indian Social Science Congress during December 27-31, 2006 at Alagappa Univeristy, Karaikudi.

Presented a paper entitled “Biodecolourization of dye industry effluent by Streptomyces sp. isolated from dye amended soil” in the International Symposium on Recent Advances in Biological Sciences at K. S. R. Centre for Biological Sciences, Tiruchengode during October 11-12, 2001. **(Won Best Presentation award)**

Presented a paper at the National Level Seminar on “Current Trends and Future Directions in Life Science” at Muthayammal College of Arts and Science, Rasipuram on January 4th and 5th, 2002. **(Won Best Presentation award)**

POSTERS PRESENTED

Two posters were presented at the 49th Annual Conference of Association of Microbiologists of India from 18-20 November, 2008 at University of Delhi.

a). Molecular Identification of the Virulent Genes (*prtF1* and *prtF2*) in Group A Streptococci isolated from Indian children with pharyngitis.

2. Understanding the *Streptococcus pyogenes* mediated infectious process using the model organism, *Caenorhabditis elegans*.

PARTICIPATION IN SEMINARS

State Level Intercollegiate PG Seminar on "Recent Advances in Microbiology and Biotechnology" at Lady Doak College, Madurai on 7th and 8th September 2001.
Symposium on "Biotechnology at the Turn of the Millennium" held at Chennai on February 4th and 5th, 2002.

National Seminar on "Microbes in Peace and War" at Sengunthar Institute of Post Graduate Study and Research in Microbiology on 21st and 22nd February, 2002.

One Day Regional Seminar on "WTO AND MEDICINAL BIO-TECHNOLOGY" at Hotel Taj Retreat, Madurai on 30th September, 2002.

State Level Seminar on "Pollution – A DEATH KNELL TO THE ENVIRONMENT" at R. D. G. A. College Sivagangai, on 21st and 22nd January 2002 and presented a paper on "Bacteriological Survey of Meat from Slaughter House In and Around Madurai".

Participated in the Intercollegiate Students Seminar on "Microbes and Environment" at Thiagarajar College, Madurai on 19th February 2003.

National Level Seminar On Special Lectures In Biosciences at Bharathidasan University, Trichy from 31st March to 1st April 2004.

Participated in the International Workshop cum Seminar on "Advances in Modern Biotechnology and Molecular Techniques in Veterinary Parasitology: Diagnosis, Chemotherapy and Control" at Alagappa University during March 17-21, 2008.

TRAINING & WORKSHOPS

Participated in the Two days National level FIP on Teaching Methodologies and Collaborative Teaching Tools on 29th and 30th September, 2023 conducted by ACT Academy, Tamil Nadu.

Participated in the Two days National level SDP cum Lecture Worshop on Insights and Recent Trends in Virology on 18th and 19th September, 2023 conducted by ACT Academy, Tamil Nadu.

Participated in Hands-on training National workshop on "Methods in cell culture and *In vitro* Toxicology" at National centre for Alternatives to Animal Experiments (NCAAE), Bharathidasan University, Tiruchirappalli on December 13-19th, 2017.

Acquired Training Course in "Molecular Genetic Methods in Diabetic Retinopathy" at Aravind Medical Research Foundation, Madurai during 4th to 14th February, 2008.

Induction Training Programme in Environmental Engineering at Periyar Maniammai College of Technology for Women, Vallam-Thanjavur between 1.6.2004. to 11. 6. 2004.

Two days workshop on Medical Laboratory Technology conducted by Seahorse Hospitals Ltd., Trichy on 15th and 16th July 2000.

State Level Workshop on the State-Of-The-Art Techniques In Agricultural Microbiology at A. V. V. M. Sri Pushpam College Thanjavur District, between 4-6 October 2002.

PERSONAL DETAILS

Father's Name	: R. Ramalingam
Husband's Name	: K. Balachandar
Kids	: Two female children
Date of Birth	: 20 August 1980
Sex	: Female
Community	: BC
Nationality	: Indian
Marital Status	: Married
Permanent Address	: 77, M. K. illam, Koothappar Road Thiruverumbur , Trichy – 620013. Tamil Nadu, India.