

CURRICULUM VITAE

DR. (Ms) REKHA KHUSHIRAMANI

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UNESCO-MIRCEN for Marine Biotechnology,
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Educational qualifications

Degree awarded	Year of completion	Courses studied	University/College studied	Grade obtained
PhD (Microbiology)	2002	Thesis Title : Molecular identification and characterization of low calcium response related virulence factors in Indian <i>Yersinia pestis</i> strains	Defense Research and Development Establishment, Gwalior, India	
M.Sc (Applied Microbiology)	1998	Bacteriology, Virology, Mycology, Food Microbiology, Immunology, Molecular biology, Parasitology	Cancer Hospital and Research Institute, Gwalior, India	67.5%
B.Sc. (Biology)	1996	Botany, Zoology, Chemistry, Foundation Course	Kamla Raja Girls College, Gwalior, India	67.8%

Publications

- Khushiramani, R.,** Shukla, J., Tuteja, U. and Batra, H.V. *Yersinia* outer membrane protein B (YopB): Tool for identification of *Yersinia pestis* isolates. ***Journal of Medical Microbiology***. 2006. 55(Pt 4):467-9.
- Khushiramani, R.,** U. Tuteja., J. Shukla, and H. V. Batra. Virulence markers of LCR plasmid in Indian strains of *Yersinia Pestis*. ***Acta Pathologica, Microbiologica et Immunologica Scandinavica*** . 2006 Jan;114(1):15-22.
- Khushiramani, R.,** Tuteja, U., Shukla, U. and Batra, H.V. Generation and characterization of murine monoclonal antibodies to recombinant YopM, YopB and LcrV. ***World Journal of Microbiology and Biotechnology***. October 2005.21(6-7):955- 960.
- Sudeep AB, **Khushiramani, R,** Athawale SS, Mishra AC and Mourya, DT. Characterization of a newly established Potato tuber moth (*Phthorimaea operculella* Zeller) cell line. ***Indian Journal of Medical Research***. 2005 Mar;121(3):159-63.
- Khushiramani, R.,** Tuteja, U., Shukla, J. and Batra, H.V. Characterization of the outer membrane proteins of *Yersinia pestis* and *Yersinia pseudotuberculosis* strains isolated from India. ***Indian Journal of Experimental Biology***. May 2004. 42:508-514.
- Batra H. V., **Khushiramani R.,** Shanmugasundaram M., Shukla J., and Tuteja U. 2004. The virulence components of plague bacilli: A potent biological weapon. Chapter 10. Pharmacological perspectives of Toxic Chemicals and Their Antidotes. Eds., S. J. S. Flora, J. A. Romano, S.I. Baskin and K. Sekhar. Narosa Publishing House, New Delhi, India. p147- 167.

Manuscripts under communication

Khushiramani, R., Shukla, J., Tuteja, U. Batra, H.V. Identification of *Yersinia pestis* strains using PCR and monoclonal antibodies. ***Journal of microbiological methods.***

Khushiramani R, Dubey M. L. and Varma S.. Detection of *Plasmodium falciparum* antigen in cerebrospinal fluid of cerebral malaria patients. ***Southeast Asian Journal of Tropical Medicine and Public Health.***

Khushiramani, R., Ramesh S Jadi, D. T. Mourya A. C. Misra. Development of monoclonal antibodies to dengue virus. ***Journal of Clinical Microbiology***

Khushiramani, R., Barde P, Bhatt J, D. T. Mourya A. C. Misra. Characterization of Indian dengue isolates with PCR and SSCP analysis. ***European Journal of Microbiology.***

Khushiramani, R., and Batra, H.V. Plague : The potent biological weapon. Minireview. ***Infection and Immunity***

Khushiramani R., Girisha SK, Karunasagar I and Karunasagar I. Cloning and expression of an outer membrane protein ompTS of *Aeromonas hydrophila* and study of immunogenicity in fish. ***Aquaculture***

Khushiramani R., Girisha SK, Karunasagar I and Karunasagar I. The outer membrane protein 48 (omp48) of *Aeromonas hydrophila* as a vaccine candidate for Indian major carps. ***Fish and Shellfish Immunology.***

Khushiramani R., Girisha SK, Karunasagar I and Karunasagar I. Prevalance of different outer membrane proteins in isolates of *Aeromonas* spp. of southwest coastal region. ***Environmental Microbiology.***

Shabarinath SS., **Khushiramani R.,** Karunasagar I and Karunasagar I. Invasive nature of seafood associated nontyphoidal serotypes of Salmonella. ***Microbs and Infection***

Oral presentations

Khushiramani, R., Tuteja, U., Shukla, U. and Batra, H.V. Virulence markers of LCR plasmid in recent Indian strains of *Yersinia pestis*”, National Congress of Indian Association of Medical Microbiologist, AIIMS, New Delhi, India. 22 to 25 Nov. 2001.

Khushiramani, R., Shukla, J., Tuteja, U. Batra, H.V. Identification of *Yersinia pestis* strains using PCR and monoclonal antibodies at XXVI Annual Congress of Indian Association of Medical Microbiologist, NIMHANS, Bangalore, India. 20 to 24th Nov. 2002.

Khushiramani, R, Mourya D. T., Shauche, Y. Bioinformatics based phylogenetic analysis of Dengue 1 and Dengue 2 virus serotypes isolates from different parts of India, at College of Fisheries, Mangalore, India. 13-17 Feb 2006.

Poster presentations

Khushiramani, R., Batra, H.V. Low Calcium Response Related Outer membrane proteins in Indian *Yersinia pestis* strains at Indian Association of Pathologists and Microbiologists NW Chapter Conference, PGI, Chandigarh, India. 6th April, 2002.

Khushiramani, R., Tuteja, U., Shukla, J. and Batra, H.V. Generational and characterization of *Yersinia pestis* strains using recombinant YopB protein, at Cancer Hospital and Research Institute, Gwalior, India. 13 Jan 2003.

Present engagement

May 2006- till date Research Associate (Aug 2005 to till date), in Department of Biotechnology, Govt of India funded project entitled "Programme support on Fisheries" at the UNESCO-MIRCEN for Marine Biotechnology, College of Fisheries, Mangalore, India.

The work involves Cloning, expression and purification of two important outer membrane proteins of *Aeromonas hydrophila* an important fish pathogen in tropics. Generation of polyclonal antibodies in mice and rabbits for characterization of these proteins. Development of the diagnosis kit for detection of *A. hydrophila* based on the immunogenicity of the recombinant proteins and for potential use as subunit vaccine.

Differential survival potency of *Salmonella* spp. in food isolates in murine macrophage cell lines J774A1. Reservoir characteristics of *Amoeba castolenni* with various isolates of *Salmonella* spp. Cloning and expression of thermostable direct haemolysin (tdh) of *Vibrio parahaemolyticus*. Characterization of recombinant protein using various cell lines and antibodies. Generation of monoclonal antibodies for the identification of *V. parahaemolyticus* in sea food. Study of viral envelope proteins of white spot syndrome virus (WSSV) as candidate subunit vaccine. Cloning and expression of antimicrobial peptides to protect the fishes from infection.

Past Research Experiences

Jan 2003 to May 2004 Research Associate, Microbial Containment Complex, National Institute of Virology, Pune, India.

Cultivation and maintenance of different Dengue virus isolates in suckling mice (suckling mice) and C636 insect cell line. Identification and serotyping of isolates using RT-PCR and nested PCR. Characterization of dengue virus strains of Indian origin by SSCP analysis (heplotyping) and Phylogenetic analysis using NS-1 gene and E-genes sequences.

Development and characterization of dengue virus as well as flavivirus specific hybridoma for the antigen detection in the suspected cases.

Characterization of new developed insect cell lines by RAPD analysis.

Dec 2001 to Dec 2002 Research Associate, Department of Parasitology, Post Graduate Institute of Medical Education and Research, Chandigarh, India.

Indian Council of Medical Research (ICMR) funded project of Cultivation and maintenance *Plasmodium falciparum* culture. Extraction of *P.falciparum* antigen and immunization of malarial antigen in mice and rabbit. Generation of polyclonal and monoclonal antibodies specific for *P. falciparum* antigen. Development of monoclonal antibody based ELISA for the detection of malarial antigen in the cerebrospinal fluid of cerebral malaria patients.

Aug1998 – Oct 2001

Senior Research Fellow, Division of Microbiology, Defense Research and Development Establishment, Gwalior

Typing of *Yersinia pestis* isolates recovered from city Surat during the 1994 outbreak and also of isolates from surveillance region of Deccan plateau of region of India by conventional method (outer membrane protein preparation and its profile by SDS-PAGE), PCR, recombinant DNA-technology (cloning, expression, purification, characterization of recombinant outer membrane proteins), SSCP analysis. Development of polyclonal, monoclonal antibodies based ELISA and Western blotting techniques. Utilization of PCR and antibody based assays for identification, characterization, typing of Indian *Y.pestis* isolates.

Teaching experience

July 2004 -Aug 2005

Assistant Professor, Department of Microbiology, Boston college of Professional Studies, Gwalior University, India.

Technical Skills

Routine microbiological Isolation and identification of bacteria, fungi, virus and parasites on conventional and molecular techniques.

Protein purification and characterization by chromatographic techniques

Gel electrophoresis of proteins, native/SDS/1D/2D gel electrophoresis

Molecular techniques

DNA, RNA and plasmid extraction from eukaryotic and prokaryotic cells

PCR and RT-PCRs for gene targeting and cloning

Cloning in plasmid vectors, Expression of recombinant protein as fusion protein

SSCP, RAPD, RFLP Analysis of genomic DNA

Southern and dot-blot hybridization with hot probe and cold probes

Nucleotide Sequencing

Immunological techniques

Generation of polyclonal antibodies in various animals.

Hybridoma technology (Generation, selection, screening, stabilization, preservation and utilization of monoclonal antibodies)

Western blotting, dot-ELISA, Plate-ELISA, Immunofluorescence and Neutralization test

Cellular immunological technique (Macrophage Migration Inhibition Factor test), Cell mediate immunity test, B-cell rosette formation, lymphocyte transformation, Antibody dependent cell toxicity

Cell and Tissue Culture

Development and characterization of insect, potato tuber moth (*Phthorimaea operculella Zeller*) cell line.

Maintenance, preservation and utilization of various Human (Hep 2, Vero, A549), murine (J774 A1, SP2/0) and insect cell lines (C636) for various studies

Animal Handling

Determination of LD₅₀, Immunization, bleeding and other experiments related to animals viz., mice, rabbits, sheep, guinea pigs, fishes and shrimps

Bioinformatics

Software utilized: DNasis, Generunner, Oligos, Sequence quickie, Genecluster

Online search: Blast, ClustalW,

Workshops/conferences/training attended

- National Institute of Communicable Diseases-World Health Organisation training Course in Antimicrobial Resistance Monitoring as a participant at Defense Research and Development Establishment, Gwalior, India (8/2/99 to 12/2/99).
- XXV National Congress of Indian Association of Medical Microbiologist, All India Institute of Medical Sciences, New Delhi, India (22 to 25 Nov. 2001).
- Indian Association of Pathologists and Microbiologists, NW Chapter Conference, Post Graduate Institute of Medical Education and Research, Chandigarh, India. (6th April, 2002).
- XXVI Annual Congress of Indian Association of Medical Microbiologists, National Institute of Mental Health and Neurosciences. Bangalore, India. (20 to 24th Nov. 2002)
- National symposium on “Current trends in molecular biology” at Cancer hospital and Research Institute, Gwalior, India. (13 Jan 2003).
- National “Bioinformatics” symposium at College of Fisheries, Mangalore, India (2-3Feb 2006).
- International workshop on “Molecular techniques in aquaculture and seafood safety” as a resource person at Department of Fishery Microbiology, College of Fisheries, Mangalore (13-17 Feb 2006)

Personal particulars

Father's name Sh. J. S. Khushiramani

Date of Birth 4th Oct 1975

Sex Female

Grade General

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Computer knowledge Computer knowledge: MS Office, HTML, UML, C, C++, LINUX, JAVA (Core, Beans, Servlet), Oracle 8I, Visual Basic (VB6), E. Com from SSi limited Gwalior. Full diploma in software designing (IMPACT) from SSi, limited (2002).

International languages Certificate of proficiency in **French** (2005) from Jiwaji University, Gwalior.

References

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Dr. D.T. Mourya
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