

## **Ravishankar Balakrishnashankar**

### **Address for communication:**

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DOB: 20<sup>th</sup>, April 1977



**Area of Research:** Microbial Pathogenesis and Cell Signalling

### **Academic Qualification**

- **Center for Biotechnology, Anna University, Chennai, India.**  
**Ph.D in Biotechnology (July 2001 – Till date, Expected completion November 2004)**  
Tentative title of the Thesis: ‘A study on role played by outer membrane proteins of EPEC in host cell death and Evaluation of the outer membrane protein-Maltoporin as a virulence marker for diagnosis of EPEC’. Thesis Adviser: Prof. Arun Balakrishnan.  
(Please find Thesis abstract on page 4)
- **University of Madras, Chennai, India.**  
**Master of Science in Applied Microbiology (1997-1999).** Secured first rank in the college with an overall percentage of **60.85%**.
- **Sri Sathya Sai Institute of Higher Learning, Prashanthinilayam, India**  
**Bachelor of Science (Hons) in Biosciences (1994-1997).** Secured a **CGPA 4.14/5.00**

### **Training Programmes**

- Training programme at **DSQ Biotech Ltd, Chennai** in the field of Bioinformatics from July 2000 - Oct 2000
- Training in **Dept of Biochemical Oncology, Cancer Institute (WIA), Chennai** in Basic Molecular Biology Techniques and Hybridoma Technology during the month of August, 1998.

### **Project Experience**

- Project at **DSQ Biotech Ltd, Chennai** titled "*Analysis of Viral coat proteins*" pertaining to *Gemini, Tobamo, Potex and Poti Viridae*. The analysis was

conducted *insilico* using the various online Bioinformatics Software tools. The outcome of the project was the detection and characterisation of motifs peculiar to the above-mentioned families.

- M.Sc dissertation work titled "***EGFR as a target antigen for immunotherapy against human cancers***", under the guidance of Dr.A.Meenakshi, **Dept of Biochemical Oncology, Cancer Institute (WIA), Chennai**. Work included raising monoclonal antibodies against Epidermal Growth Factor Receptor obtained from Breast Cancer tissues and testing its efficacy for its anti-tumour activity in vitro using competitive binding assay.
- Part of Water Fluoride Control Project during my B.Sc (Hons) course. Work included analysis of water samples collected from different areas for their fluoride concentration

## Publications

- Vasantha Malladi, **Balakrishna Shankar**, Peter H.Williams, Arun Balakrishnan. "**Enteropathogenic *Escherichia coli* outer membrane proteins induce changes in cadherin junctions of Caco-2 cells through activation of PKC**". *Microbes and Infection* 6 (2004) 38–50
- **Balakrishnashankar**, Vasantha Malladi and Arun Balakrishnan. "**Enteropathogenic *Escherichia coli* outer membrane proteins induce apoptosis through JNK activation in HEp-2 cells**". *Pathobiology* (Communicated)

## Conferences and presentations

- Poster presentation titled " A study on role played by outer membrane proteins of WT EPEC and its mutants in host cell death" at **XXVI All India Cell Biology Conference & symposium**, conducted by Indian society of cell Biology from December 12<sup>th</sup> –14<sup>th</sup> at ACTREC, Mumbai, India.
- Attended **International Symposium on progress in Drug Discovery and Developmental Sciences**, conducted by AstraZeneca India Ltd at IISc, Bangalore from Jan 17<sup>th</sup> - 19<sup>th</sup> 2001 at IISc, Bangalore, India.
- Attended **HIV Indian Scene, Indo-UK Link Projects Decennial Commemoration Conference**, conducted by University of Madras, YRG Care & British High Commission at CLRI, Chennai, India from Jan 18<sup>th</sup> - 19<sup>th</sup> 1999
- Active participant in the National Symposium on Fluorosis, conducted by SSIHL, Prashanthinilayam, India during July 1994

## Technical Skillsets

- **Cell Biology:** General maintenance of cell lines, Proliferation and toxicity studies using Tritiated thymidine incorporation assay, Flow cytometry analysis, Staining techniques (Propidium Iodide, AnnexinV, and Fluorescence actin staining)
- **Microbiology:** Screening, isolation and identification of microorganisms; Maintenance of microbial cultures; Adherence assays

- **Molecular Biology:** Plasmid DNA, Genomic DNA and mRNA extraction; Restriction analysis of plasmid and genomic DNA; PCR, RT-PCR, Primer designing for PCR, DNA sequencing; N-terminal sequencing.
- **Protein Biochemistry:** SDS-PAGE, Raising antisera in small animals such as rabbits and mice; Western, Dot blotting; ELISA, Separation and purification of proteins using different chromatographic methods (IMAC, HPLC, FPLC etc), Protein sequencing, Biological assays and analytical techniques, Simple slide and Latex bead agglutinations.

### **Bioinformatics Skill Sets:**

Sequence Alignment Tools: BLAST, FASTA, ClustalW, Structure Prediction Tools: Phd, Predator, Jpred, Modelling Tools: Swiss Model, Sausage, Packages: Isis draw/base, Alchemy 2000, Rasmol, Chime, Weblab viewer, Insight II

### **Other experiences:**

- **Teaching experience:** Undergraduate courses for Industrial Biotechnology; Training graduate students on different laboratory procedures; coordinating dissertation work for Masters and visiting students for the past 3 years.
- **Communication and co-ordination skills:** Organization of group seminars at various levels; Designing of work plans; Trouble shooting technical problems; Setting up and general upkeeping of the laboratory.

### **Referees:**

- **Dr. Arun Balakrishnan (Research Supervisor)**  
Director & Professor, Centre for Biotechnology, Anna University, Chennai – 600025,  
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- **Dr. P. Gautam**  
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- **Dr. R. B. Narayanan**  
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### **Professional memberships:**

- A member of Biotech Research Society of India (BRSI), Trivandrum, India.