

CURRICULUM VITAE

SELVARAJ VELLAICHAMY

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Age & Date of Birth 36 years, 04 - 05 -1969

Sex Male

Nationality Indian

Marital Status Married

Educational Qualification **Ph.D., in Biotechnology** Submitted on August 2004 to MK University, Madurai, Tamilnadu, India and waiting for the viva.
Topic of the thesis – ISOLATION AND CHARACTERIZATION OF IMMUNOSTIMULANTS WITH SPECIAL REFERENCE TO DISEASES MANAGEMENT IN AQUACULTURE.
-Research Supervisor – Dr. V. Sekar, Professor and Head, Department of Molecular Microbiology School of Biotechnology, Madurai Kamaraj University, India.
-M.Sc., in Microbiology (1993) in VHNSN College affiliated to Madurai Kamaraj University, Madurai, India.
B.Sc., in Zoology (1991) Vivekanda College affiliated to Madurai Kamaraj University, Madurai, India.

Professional/Research Experience Presently working as a **Manager for bioassay Method development and validation in the department of Biotechnology & Microbiology in SGS Life Science Services, TICEL Biopark, Chennai, India.**

Job Responsibility:

1. Over all responsibility of Biotech and Microbiology lab
2. Shall be responsible for work allocation to Microbiologist, and Biotechnologist
3. Development and validation of ELISA methods
4. Development and validation of Real – Time PCR Methods
5. Development and validation of *In – Vitro* Assays using specific cell line for pharmaceutical and Biopharmaceutical products
6. Responsible for reviewing the Operation and Calibration Standard Operation Procedure (SOPs)
7. Coordination with Quality Assurance (QA) department during audit and giving training and other QA activities
8. Monitoring day to day activities with GLP compliance

Successfully completed Project.

1. ELISA method has developed and validated for estimation of available drug molecules Granulocyte stimulating factor (GCSF) in rabbit serum for INTAS Biotech (preclinical study- Pharmokinetic and Pharmokodynamic).
2. *In-vitro* cytotoxicity and cell proliferation method has developed and validated for medical device and anticancer drug molecule using Human lymphocyte, Mouse fibroblast and HeLa cell line
3. *In-vitro* chromosomal aberration method has developed and validated for drug molecules screening using CHO cell line.
4. Quantitative PCR method has developed and validated using Taqman technology for cytokine molecules mRNA expression

Research Experience

Worked in the field of immunology and molecular biology during Ph.D. tenure, with the following research objectives:

1. Isolation, characterization and purification of yeast β - glucan from *Saccharomyces cerevisiae* and Lipopolysaccharide (LPS) from *Aeromonas .hydrophila*
2. To study the immunomodulatory effect of β -glucan and

- Lipopolysaccharide (LPS) in carp (*C. carpio*).
3. Examination of their effect on disease resistance of carp challenged with *Aeromonas hydrophila*
 4. To study the suitable methods of delivery (intraperitoneal, bathing and oral route) and dosage of β -glucan and LPS individually and combined.
 5. To study the adjuvant properties of β -glucan with LPS by different route of administration
 6. To study the effect of β -glucan and LPS on the non-specific cellular and non-specific humoral immune response of carp.
 7. To study the effect of β -glucan and LPS on specific immune response against the vaccine *A. hydrophila*
 8. To study the effect of β -glucan and LPS on the expression level of interleukin I β mRNA.

Publications:

- V. Selvaraj, K.Sampath and V.Sekar. 2004. Extraction and Characterization of Lipopolysaccharide from *Aeromonas hydrophila* and its Effects on Survival and Hematology of the carp, *Cyprinus carpio*. **Asian Fisheries Science 17:163-173.**
- V. Selvaraj, K.Sampath and V.Sekar. 2005. Use of Glucan from *Saccharomyces cerevisiae* as an immunostimulant: The impact of glucan treatment on Survival, Hematology and on some non-specific immune function of carp (*Cyprinus carpio*) infected by *Aeromonas hydrophila* **Israeli Journal of Aquaculture 57:39-48**
- V. Selvaraj, K.Sampath and V.Sekar 2005. Administration of yeast glucan enhances survival and some non-specific and specific immune parameters in carp (*Cyprinus carpio*) infected with *Aeromonas hydrophila*. **Journal of Fish Shellfish Immunology 19:293-306.**
- V. Selvaraj, K.Sampath and V.Sekar. 2006. Adjuvant and Immunostimulative effect of yeast glucan with Lipopolysaccharide (LPS) on survival and some non-specific and specific immune parameters in carp (*Cyprinus carpio*) infected with *Aeromonas hydrophila*.

(Revised version Communicated to Veterinary immunology and immunopathology).

V. Selvaraj, K. Sampath and V. Sekar. 2006. Effect of lipopolysaccharide (LPS) administration on survival and some immune parameters in carp (*Cyprinus carpio*) infected with *Aeromonas hydrophila*.
(Communicated)

Work Experience:

Worked as a **Research Associate in Mitocon Biotech Research and Development** (Division of SPIC), SPIC Limited Tuticorin- 5, Tamilnadu, India, (September 1995 – August 2004.)

Job Responsibility: Fermentor operation & Downstream processing.

Isolation and selection of high yield strain. Yield improvement by Medium optimization, Mutation and Recombination. Media preparation, Inoculum preparation, Media sterilization and Contamination checking, Stock cultures maintenance. Product recovery by adopting different downstream processes like ultrafiltration & precipitation. Concentration of product by RO system, Purification by chromatographic methods

Successfully completed Project.

1. Yield improvement of enzymes (**Protease, Amylase and Xylanase**) producing strains by mutation and Recombinant Technology. Purification of enzymes by following different Down Stream processing methods. Standardization of enzyme stability. Technology was transferred to production unit.
2. Yield improvement of **Xanthan gum** from *Xanthomonas*. Technology was transferred to production unit.
3. Yield improvement of **Acetone, Ethanol and Butanol** production from *clostridium acetobutylicum*. Technology was in pilot plant level.

Worked as a **Microbiologist in SGS India Limited** Madras, India. (August 1993-1995).

Job Responsibility: Isolation, Identification and Characterization of pathogenic and non pathogenic microbes from water, food and

pharmaceutical product including Sterility testing, Pyrogen, Bioburden, Microbial Limit Test, Vitamin assay, Antibiotic Assay, Preservative efficacy Test (Above test are performed as per USP, BP and IP)

Techniques known:

Molecular biology Techniques:

1. Preparation and Analysis of DNA

Extraction and Characterization of Chromosomal DNA from animals and bacterial cells, plasmid DNA extraction by from bacterial cells, Restriction digestion, and Genomic Polymerase Chain Reaction (PCR) Molecular weight determination by agarose gel electrophoresis, DNA hybridization (Southern blot), Ligation and Transformation etc.

2. Preparation and Analysis of RNA

RNA preparation from animals and bacterial cells, Formaldehyde gel electrophoresis, cDNA preparation, RT-PCR analysis, quantitative PCR (Q PCR), RNA hybridisation (Northern blot) etc.

3. Preparation and Analysis of Protein

Separation of Protein by Precipitation like ammonium sulphate, Organic solvents, Concentration of protein by lyophilization, Ultrafiltration, Purification of protein by gel filtration and ion exchange chromatography. Molecular weight determination of protein by Native Polyacrylamide gel electrophoresis (PAGE), Sodium dodecyl sulphate- Polyacrylamide gel electrophoresis (SDS PAGE), Silver staining and Coomassie staining etc.

Immunological Techniques:

Antibody production and Purification:

Antigen preparation and immunization in rabbit, mice and rat, Confirmation of antibody by Western blot analysis, Purification of antibody by gel filtration and affinity chromatography column, Quantification of antibody by immunodiffusion, Agglutination, Immunoelectrophoresis, and Enzyme linked immunosorbent assay (ELISA), Phagocytosis, Oxygen burst activity (NBT assay),

Complement Classical and Alternative pathway assay, etc.

Blood chemistry:

Enumeration of RBC, WBC counts by haemocytometer and CD3 CD4, CD8 and Reticulocyte count by Flow cytometry.

In vitro assays:

Apoptosis and Cytotoxicity evaluation in cancer cells, AMES Test (Reverse Mutation), Chromosome karyotyping and Micronucleus in lymphocyte population and cell proliferation assay by Thymidine incorporation etc

Cell Culture Techniques:

A septic removal of selected organs and tissues from Mouse, Rabbits and fish. Preparation of cells from organs and tissues. Separation of cells by Ficoll or Percoll density gradient centrifugation. Preparation and sterilization of cell culture media, Culturing and Sub culturing of normal and cancer cells, Cell counting and Viability checking, preservation of cells, Contamination checking like bacteria, fungi, mycoplasma etc.

Instruments Handled

1. Flow Cytometry BD FACS Caliber
2. Quantitative Real Time -PCR (ABI PRISM 7000)
3. Conventional PCR
4. High Pressure Liquid Chromatography (HPLC)
5. ELISA Reader and washer
6. Liquid scintillation counter
7. IR-Spectrum
8. UV-Visible Spectrophotometer
9. Gel electrophoresis slab gel and vertical gel
10. Gel documentation system
11. Gel transfer (blotting) both DNA and Protein
12. Fluorescent microscope
13. CO₂ incubator

14. Fermentor operation (1.5 L, 35 L and 1500L)
15. Reverse Osmosis RO System
16. Amicon Ultra filtration unit
17. Spray dryer
17. Lypholizer

Computer Known

WINDOWS 2000, MS WORD, MS EXCEL, MS POWER POINT, etc.

Workshop Attended:

Workshop on **Immunology** from 24.05.2001 to 30.05.2001 Conducted by Central Facility For Biotechnology School of Biotechnology, Madurai Kamaraj University, Madurai.

-INDO-UK Workshop on **Molecular Biology** from 4.02.2002 to 13.02.2002, Conducted by Department of Biotechnology Bharathidasan University, Tiruchirapalli-620024.

Workshop on **Quantitative Polymerase Chain Reaction Q-PCR (ABI PRISM 7000)** from 07.02.2005 to 08.02.2005 Conducted by Molecular Biology Lab India Gurgaon, Delhi india.

Workshop on **Flow Cytometry BD FACS Calibur** from 13.06 2005 to 15.06.2005 Conducted by BD Biosciences Training Centre, Gurgaon, Delhi India.

Workshop on **Post-graduate Skill Development Course in Animal Cell Culture and its application** Conducted by Bioscience of Oncophyta Labs, Madurai Kamaraj University.

Symposium/ Seminar

National Symposium on **Functional Genomics** (February 2002). SBS, Madurai Kamaraj University, Madurai. National Seminar on **Cancer Genomics** (28th February 2004). Centre for Advanced Studies on functional Genomics, School of Biological Sciences, Madurai Kamaraj

University, Madurai – 625 021.

National Conference on **Good Laboratory Practice (GLP)** from 13.01.2005 to 15.01.2005 Conducted by Industrial Toxicology Research Centre, Lucknow

National **Good Laboratory Practice (GLP)** from 20.02.2006 to 22.02.2006 Conducted by Department of Science and Technology Government of India New Delhi.

References

Dr. V. Sekar, (Research Guide)
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I hereby declare that the details furnished above about myself are true to the best of my knowledge and belief.

Sincerely Yours
V.SELVARAJ