SUNIL KUMAR GEORGE Ph.D
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OBJECTIVE

To obtain a research-oriented position in a reputed research organization that offers challenging career opportunities. A self-motivated independent thinker with the ability to proactively and independently complete assigned tasks. Willing to relocate.

RESEARCH EXPERIENCE

- Generation of bone marrow reconstitution system to track cellular anti-tumor immune responses in vivo using bioluminescence imaging techniques
- Studied cellular and molecular mechanism of tolerance induction against autoimmune diabetes type 1 using genetically engineered MHC II peptide chimera.
- Developed cell lines from fish and prawns.
- Cell and Tissue culture techniques.

EDUCATION

2001 Cochin University of Science and Technology India
Ph.D Environmental Microbiology
Dissertation: Development of Cell Culture systems from selected species of fish and prawns

1994 Manonmanium Sundaranar University India
Bachelor's Degree (B.Ed.) Education

1993 Manonmanium Sundaranar University India
M.Phil Zoology
Dissertation: Studies on physiology of *Etropus maculatus*

1992 Manonmanium Sundaranar University India
Master's Degree (M.Sc.) Zoology

1990 Madurai Kamaraj University India
Bachelor's Degree (B.Sc.) Zoology

PROFESSIONAL EXPERIENCE

2004 - Present Wake Forest University Baptist Medical Center, Winston-Salem, NC, USA
Research Associate

- Bone-marrow reconstitution using (lentivirus/retrovirus) , to track cellular anti-tumor immune responses in-vivo
- Visualization of the anti-tumor immune response using multi-modality non-invasive molecular imaging techniques

- Determination of the kinetics of localization and special distribution of immune cells in a tumor site.

2002 - 2004 Mount Sinai School of Medicine, New York, USA

Post Doctoral Fellow

- Down regulation of diabetogenic CD4+ T cells using soluble dimeric peptide by a genetically engineered MHC II peptide chimera
- Studies on the mechanism by which DEF, MHC II chimeric peptide includes anergy and negative regulation in auto reactive T cells
- Detection and regulation of beta cell reactive CD4 T cell function in Type 1 diabetic patients and their relatives by soluble, dimeric HLA-DR4/ peptides chimeras

1995 - 2001 School of Environmental Studies, Cochin University, India

Senior Research Fellow(1998-2001)

- Development of cell lines from fishes such as *Poecilia reticulata* larvae (PRL-1), *Clarias gariepinus* liver(CGL-1), kidney (CGK-1), spleen (CGS-1), testis (CGT-1) and Ovary (CGO-1) and cell culture from *Penaeus indicus* hepatopancreas (PH-1), Ovary (PO-1), Eye Stalk (PES-1)
- Characterization of developed cell lines, Isolation and cultivation of white spot disease viruses from prawns.
- Vaccine development for white spot disease viruses in *Penaeus indicus*

Scientific Assistant (2001)

- Rapid Environmental Impact Assessment of Amini Island, Lakshadweep, India

Research Fellow (1995-1998)

- Isolation of viruses associated with epizootic ulcerative syndrome

1993 St.John's College, Manonmanium Sundaranar University, India

Research Fellow

- Studies on physiology of *Etroplus maculatus*

TECHNICAL SKILLS

- DNA, PCR, Primer designing, Cloning, Southern blot, Protein expression, generation of lentiviral and retroviral construct, transformation of cell lines, production- purification of viral stock, viral infection of primary cell and cell lines, bone marrow reconstitution, injection and imaging of mice
- Proteins, Electrophoresis (SDS-PAGE, agarose), Chromatography (ion exchange, affinity), Western blot, ELISA, Purification of polyclonal antibodies
- Development of cell culture from fish and prawns, animal cell culture, bone marrow culture, isolation viruses, culture and identification of bacteria from fish and prawn, human blood cell separation, proliferation assay - FACS, luciferase assays, microscopy, production and purification of antibodies, histopathology, animal surgery.

AWARDS AND HONOURS

- *Research Associate*, Juvenile Diabetes Research Foundation, USA
- *Senior Research Fellow*, Department of Biotechnology, Government of India.
- *Junior Research Fellow*, State Committee of Science and Technology, Government of Kerala, India.

PUBLICATIONS

Sunil K. George, Ioana P, Avagyan S, Robert C.M, Robert R, Brumeanu T-D and Casares S. 2004. Immunokinetics of autoreactive CD4 T cells in blood: A reporter for the "Hit-and-Run" autoimmune attack on pancreas and diabetes progression. Journal of Autoimmunity 23:151-160

Kumar G.S, Singh I.S.B and Philip R. A cell culture system developed from the eye stalk of *Penaeus indicus*. In animal cell technology: From target to market. Kluwer Academic Publishers, The Netherlands, 2001, 261-265.

Kumar G.S, Singh I.S.B and Philip R. Development of an appropriate medium and subculturing techniques for a cell culture system from the ovarian tissue of African catfish (*Clarias gariepinus*), Aquaculture 2000,194: 51-62.

Kumar G.S, Singh, I.S.B and Philip R. Development of cell culture systems from liver, kidney and spleen of African cat fish *Clarius gariepinus*. *In vitro* (Proceedings) 2000. Vol. 37. (3): 85.

Sen A, Singh I.S.B, Rengarajan.R, Sen A, Philip R. and **Kumar G.S**, Evidence of bacilliform virus causing outbreak of white spot disease in *Penaeus monodon*. Asian Fisheries Science, 1999, 12: 41-47.

Kumar G.S, Singh I.S.B. Philip R, Raveendranath M and Shanmugham J. Efficacy of fish and prawn muscle extracts as supplements of medium in development of primary cell culture system from larval tissue of aquarium fish *Poecilia reticulata*. Indian Journal of Experimental Biol. 1998, Vol.36: 91-94.

Nelson J and **Kumar G.S**. Effects of ekalux on haematology of the fresh water fish *Etroplus maculatus*. J.Ecotoxicol.Envt.Monit. 1997, 7(2):113-116.

Nelson J and **Kumar G.S**. Effect of Ekalux on biochemical parameters in the fresh water fish *Etroplus maculatus*. J.Ecotoxicol.Envt.Monit. 1996, 6(1) :65-67

PUBLICATIONS – CONFERENCES

Sunil K. George, Miranda L.Moore, Elizabeth J.Akins, Pritha Ray, Sanjiv S.Gambhir and Purnima Dubey. Introduction of molecular imaging reporter genes into murine lymphoid progenitors *in vivo* by lentivirus-mediated transduction of bone marrow. The Fourth Annual Meeting of Society for Molecular Imaging, Sept 7-10, 2005, Cologne, Germany.

Ioana P, Robert C.M, Robert R, **Sunil K. George,** Brumeanu T-D and Casares S. 2004. The frequency and phenotype of autoreactive CD4 T cells in blood of patients with Type 1 diabetes and their first relatives. 64th Annual Scientific Sessions of American Diabetes Association, June 4-8, 2004, Orlando Florida.

Ioana P, Robert C.M, **Sunil K. George**, Robert R, Brumeanu T-D and Casares S. 2003. MHC class II-Peptide chimeras for identification and down regulation of diabetogenic T Cells. 7th symposium on Virus Host Interactions, New York Academy of Sciences, New York.

Sunil K. George, Serine A, Robert C.M, Brumeanu T-D, Casares S. 2003. Kinetics of autoreactive CD4 T cells in blood: An accurate readout system for the disease progression. 8th symposium on Virus Host Interactions, New York Academy of Sciences, New York.

Kumar G.S, I.S.B.Singh and Philip R. 2001. A cell culture system developed from the eyestalk of *Penaeus indicus*. 17th European society for Animal Cell Technology (ESACT), June 10-14, 2001, Sweden.

Kumar G.S, I.S.B.Singh and Philip R. 2001. Cell lines as tools for detection, Isolation and study of viruses, Rickettsias and other obligate pathogenic microbes of fish and prawns. National Workshop on Aquaculture Medicine, CFDDM, Cochin University.

Kumar G.S, Singh I.S.B, Philip R, Raveendranath M and Shanmugham J 1999. Development of primary cell culture and cell line from the larval tissue of fresh water fish *Poecilia reticulata*. The fourth Indian Fisheries Forum, Cochin.

Sen A, Singh I.S.B, Sen A, **Kumar G.S**, and Philip R. 1999. Isolation and characterization of the aetiological agent of white spot disease in Penaeids. The fourth Indian Fisheries Forum, Cochin.

REFERENCES

Submitted upon request