

CURRICULUM VITAE

DINESH BABU SOMASUNDARAM

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EDUCATION

Post-Doctoral Fellow 2015-Current

Department of Radiation Oncology, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma 73104.

Ph.D. in Biomedical Sciences/Endocrinology 2009-2015

Thesis Title: **Effects of gestational exposure to Di(2-Ethylhexyl) Phthalate (DEHP) on the structure and function of the ovary and uterus of offspring rats** under Dr. B. Ravi Sankar, Department of Endocrinology, University of Madras, Chennai, INDIA

Master of Sciences in Biomedical Sciences 2006-2008

Course work: 1st Year: Biochemistry, Micro biology, Molecular biology, Anatomy, Physiology, Pharmacology and Biostatistics. 2nd Year: Hormones: Structure, synthesis, secretion, transport and metabolism; Physiological and molecular mechanism of actions; Pathophysiology. Project work - **Effect of Aroclor 1254 in the expression of Human Androgen Receptor and Aryl Hydrocarbon Receptor in Human SaOS 2 cells.**

University of Madras, Chennai, INDIA

Passed with First Class

Bachelor of Sciences in Biochemistry 2003-2006

Jaya College of Arts and Science, Chennai, INDIA

Passed with First Class

RESEARCH EXPERIENCE

Research Scholar 2009-2015

Department of Endocrinology, University of Madras, Chennai, INDIA

UGC- BSR-RFSMS Research Fellow 2013-2015

Department of Endocrinology, University of Madras, Chennai, INDIA

DISTINCTIONS & HONORS

1. Appointed as Junior Research Fellow by University Grants Commission - The Research Fellowship in Sciences for meritorious students (RFSMS) scheme of the UGC, Govt. of India.
2. Serving as Distinguished adjunct faculty in Saveetha Dental College and hospital, Chennai, Tamil Nadu, India.

RESEARCH PROJECT

Worked as a Research Fellow in Research Project Entitled “Effect of the transient gestational exposure to DEHP – induced endocrine disruption in the F1 progeny rats” Funded by UGC-SAP-DRS, New Delhi. India.

PUBLICATIONS

1. Natarajan Aravindan, **Dinesh Babu Somasundaram**, Sheeja Aravindan, Zhongxin Yu, Karthikeyan Subramanian, Terence S. Herman. Heterogeneous distribution of retinal degeneration protein 3 in human fetal normal tissues. *J Interdiscip Histopathol.* 2019; 7(2): 20-37.
2. Natarajan Aravindan, Drishti Jain, **Dinesh Babu Somasundaram**, Terence S. Herman, Sheeja Aravindan. Cancer stem cells in neuroblastoma therapy resistance. *Cancer Drug Resist* 2019.
3. Natarajan Aravindan, Karthikeyan Subramanian, **Dinesh Babu Somasundaram**, Terence S. Herman, Sheeja Aravindan. MicroRNAs in neuroblastoma tumorigenesis, therapy resistance, and disease evolution. *Cancer Drug Resist* 2019.
4. **Dinesh Babu Somasundaram**, Karthikeyan Subramanian, Sheeja Aravindan, Zhongxin Yu, Mohan Natarajan, Terence Herman & Natarajan Aravindan. De novo regulation of RD3 synthesis in residual neuroblastoma cells after intensive multi-modal clinical therapy harmonizes disease evolution. *Scientific Reports* 2019, 9:11766. Impact Factor: 4.259
5. Sheeja Aravindan, **Dinesh Babu Somasundaram**, Somasundaram T. Somasundaram, Mohan Natarajan, Terence S. Herman, Natarajan Aravindan. Targeting acquired oncogenic burden in resilient pancreatic cancer: a novel benefit from marine polyphenols. *Mol Cell Biochem.* 2019 Jul 31. Impact factor: 2.057
6. **Dinesh Babu Somasundaram**, Sheeja Aravindan, Muralidharan Jayaraman, Zhongxin Yu, Ngoc TB Tran, Shibo Li, Terence S. Herman and Natarajan Aravindan. Droplet digital PCR as an alternative to FISH for MYCN amplification detection in human neuroblastoma FFPE samples. *BMC Cancer.* 2019 Jan 28; 19 (1):106. Impact factor: 3.679
7. Sheeja Aravindan, **Dinesh Babu Somasundaram**, Kwok Ling Kam, Karthikeyan Subramanian, Zhongxin Yu, Terence S. Herman Kar-Ming Fung, and Natarajan Aravindan. Retinal Degeneration Protein 3 (RD3) in normal human tissues: Novel insights. *Scientific Reports* 2017; 13; 7:13154. Impact Factor: 4.259
8. Sheeja Aravindan, Satishkumar Ramraj, Kathiresan Kandasamy, Somasundaram S. Thirugnanasambandan, **Dinesh Babu Somasundaram**, Terence S. Herman and Natarajan Aravindan. Hormophysa triquerta polyphenol, an elixir that deters CXCR4- and COX2-dependent dissemination destiny of treatment-resistant pancreatic cancer cells. *Oncotarget* 2017; 8:5717-5734. Impact Factor: 5.41
9. **Dinesh Babu Somasundaram**, Kalaivani Manokaran, Benson Chellakkan Selvanesan and Ravi Shankar Bhaskaran. The Impact of Di-(2-Ethylhexyl) Phthalate (DEHP) on the uterus of

- adult wistar rats. *Human and Experimental Toxicology* 2016 36, 6:565-572. Impact Factor:1.74
10. **Somasundaram Dinesh Babu**, Chellakkan Selvanesan Benson, Ramachandran Ilangovan, Bhaskaran Ravi Sankar. Lactational Exposure to Di (2-ethylhexyl) Phthalate Impairs the Ovarian and Uterine Function of Adult Offspring Rat. *Reproductive Sciences* 2016; 23(4) 549-559. Impact Factor:2.23
 11. Satish Kumar Ramraj, Sheeja Aravindan, **Dinesh Babu Somasundaram**, Terence S. Herman, Mohan Natarajan, Natarajan Aravindan. Serum-circulating miRNAs predict neuroblastoma progression in mouse model of high-risk metastatic disease. *Oncotarget* 2016:1-15. Impact Factor: 6.36
 12. Benson CS, **Babu SD**, Radhakrishna S, Selvamurugan N, Ravi Sankar B. Grade dependent expression of growth factor receptors and signalling molecules in breast cancer. *Journal of Cancer Therapy* 2013; 4, 21-31. Impact Factor: 0.48
 13. Benson CS, **Babu SD**, Radhakrishna S, Selvamurugan N, Ravi Sankar B. Expression of matrix metalloproteinases in human breast cancer tissues. *Disease Markers* 2013; 34(6):395-405. Impact Factor : 2.17
 14. Suganthi M, Sangeetha G, Benson CS, **Dinesh Babu S**, Sathyavathy A, Ramadoss S, Ravi Sankar B. In vitro mechanisms involved in the regulation of cell survival by lithium chloride and IGF-1 in human hormone-dependent breast cancer cells (MCF-7). *Toxicology Letters* 2012; 214(2): 182-191. Impact Factor: 3.706.
 15. Kumaravel Mohankumar, Subhashree Sridharan, Sankar Pajaniradje, Vivek Kumar Singh, Larance Ronsard, Akhil C. Banerjea, **Dinesh Babu Somasundaram**, Mohane Selvaraj Coumar, Latha Periyasamy, Rukkumani Rajagopalan. BDMC-A, an analog of curcumin, inhibits markers of invasion, angiogenesis, and metastasis in breast cancer cells via NF-kB pathway—A comparative study with curcumin. *Biomedicine & Pharmacotherapy* 2015: 74, 178–186. Impact Factor: 2.02

RESEARCH TECHNIQUES

Molecular Biology

Western blot, Immunohistochemistry, Real time RT-PCR, QPCR, Transfection, Zymography, ELISA, 2D gel electrophoresis, microscopy and histology, Anchorage independent assay, live cell imaging, Invasion and migration assay, mutation study and sequencing and DD-PCR.

Cell Culture

Mammalian, bacterial, stem cells culture techniques

Animal Handling: Genotyping, Nude mice handling, Surgery, autopsy, administration of drugs via various routes in rats

Epigenetics

DNA methylation

CONFERENCE PRESENTATION

1. **Dinesh Babu Somasundaram**, Karthikeyan Subramanian, Sheeja Aravindan, Zhongxin Yu, Terence S. Herman, Natarajan Aravindan. Abated RD3 in residual neuroblastoma cells after intensive multi-modal therapy propel disease progression at Cancer research symposium,

- Stephenson cancer center held on February 1st, 2019, Oklahoma city, OK, USA. (Oral Presentation)
2. **Dinesh Babu Somasundaram**, Sheeja Aravindan, Kwok Ling Kam, Karthikeyan Subramanian, Zhongxin Yu, Terence S. Herman Kar-Ming Fung, and Natarajan Aravindan. Cellular and sub-cellular landscape of RD3 in human tissues: Basis for its “tumor suppressor” relevance at Cancer research symposium, Stephenson cancer center held on February 1st, 2019, Oklahoma city, OK, USA. (Poster Presentation)
 3. **Dinesh Babu Somasundaram**, Karthikeyan Subramanian, Sheeja Aravindan, Zhongxin Yu, Mohan Natarajan, Terence S. Herman, Natarajan Aravindan. De novo acquisition of RD3 loss with intensive multi-modal therapy harmonize neuroblastoma relapse at American Association of Cancer Research held on March 29th- April 3rd. 2019 at Georgia world conference center, Atlanta, USA. (Poster Presentation)
 4. **Dinesh Babu Somasundaram**, Sheeja Aravindan, Zhongxin Yu, Muralidharan Jayaraman, Ngoc TB Tran, Shibo Li, Terence S. Herman and Natarajan Aravindan. High-throughput droplet digital PCR for MYCN amplification detection in FFPE neuroblastoma samples: Cost-effective, rapid, feasible and reliable alternative to FISH at American Association of Cancer Research held on April 14-18, 2018, Chicago, USA. (Poster Presentation)
 5. **Dinesh Babu Somasundaram**, Sheeja Aravindan, Terence S. Herman, Natarajan Aravindan. Decitabine reinstate radiotherapy-induced hypermethylation mediated RD3 transcriptional repression and inhibits survival and stemness of resistant neuroblastoma cells at Cancer research symposium, Stephenson cancer center held on February 2nd, 2018, Oklahoma city, OK, USA. (Oral Presentation)
 6. **Dinesh Babu Somasundaram**, Karthikeyan Subramanian, Sheeja Aravindan, Terence S. Herman, Natarajan Aravindan. RD3 reprogramming in N-MYC non-amplified neuroblastoma evolution at American Association of Cancer Research held on April 1-5, 2017, Washington, D.C. USA. (Poster Presentation)
 7. **Dinesh Babu Somasundaram**, Karthikeyan Subramanian, Mohan Natarajan, Sheeja Aravindan, Terence S. Herman and Natarajan Aravindan. Radiotherapy triggered RD3 transcriptional repression in governing CSC status and metastatic state of surviving neuroblastoma cells at Cancer research symposium, Nicholson conference center, Stephenson cancer center held on January 27th, 2017, Oklahoma city, OK, USA. (Oral Presentation)
 8. **Dinesh Babu Somasundaram** and Natarajan Aravindan. Second generation HDAC inhibitor, Quisinostat reinstates RD3 in Neuroblastoma CSCs and promotes stem cell differentiation at American Association of Cancer Research held on April 16-20, 2016, New Orleans, USA. (Poster Presentation)
 9. **Dinesh Babu Somasundaram** and Natarajan Aravindan. HDAC inhibition with JNJ-26481585 endorses RD3-dependent cancer stem cell differentiation at Cancer research symposium, Stephenson cancer center held on Jan 29th, 2016, Oklahoma City, USA. (Poster Presentation)
 10. **Dinesh Babu Somasundaram**, Benson Chellakkan Selvanesan and Ravi Sankar Bhaskaran. Gestational exposure to di-(2-ethylhexyl) phthalate (DEHP) alters the methylation pattern of progesterone receptor in the uterus of adult F₁ offspring rats at International conference on Bioactive chemicals for reproduction and human health on Feb 26-28th, 2015, Davangere, India.
 11. **Dinesh Babu Somasundaram**, Benson C.S, Rajesh Parsanathan, Suganya Sekaran, Sambavi Elangovan and Ravi Sankar Bhaskaran. Transient gestational exposure to di-(2-ethylhexyl) phthalate (DEHP) impaired ovarian steroidogenesis of pubertal rat at National conference on

Novel Aspects and Emerging Trends in Reproduction and Endocrinology held on Jan 6-8th, 2014, Trichy, India

12. **Dinesh Babu Somasundaram**, Benson C S, Ravi Sankar B. Impact of Lactational Exposure to Di-(2-Ethylhexyl) Phthalate (DEHP) on reproductive functions of female offspring rats at international conference on REPROMICS-OMICS in reproduction held on Feb 7-9th, 2013, Kerala, India.

CONFERENCES/ SEMINARS PARTICIPATED

1. Attended seminar on Emerging Trends in Stem Cell and Tissue Engineering Research, Conducted by Frontier Tissue Line Research Centre, Chennai, July 2009.
2. Assisted in organizing the National Workshop on “*In vitro* Toxicology Adopting Integrated Discrete Multiple Organ Co-Culture” University of Madras, Taramani, Chennai, during February 16 – 18th, 2011.
3. Participated in “National Seminar on Endocrine and Metabolic Disorders”, Organized by department of Endocrinology, Dr. ALMPGIBMS, University of Madras, Taramani, Chennai, on March 9th, 2012.
4. Served as a resource person at University of Madras and National University of Singapore “Workshop on Epigenetics and gene expression” organized by the Department of Endocrinology, University of Madras, Taramani, Chennai, during December 19th – 22nd, 2012.
5. Participated in “Workshop on Basic Statistics for Graduates, Post Graduates & Researchers” organized by Frontier Lifeline Pvt. Ltd, Life Science Services, Elavur, Gummidipoondi, Thiruvallur during 21st and 22nd February 2013.
6. Served as a resource person at National Workshop on “Techniques in Molecular and Cellular Endocrinology” organized by the Department of Endocrinology, University of Madras, Taramani, Chennai-600113, during March 6th – 15th, 2013.
7. Participated in “National seminar on Diabetes and Epigenetics”, Organized by department of Endocrinology, Dr. ALMPGIBMS, University of Madras, Taramani, Chennai, on March 20th, 2015.

PROFESSIONAL MEMBERSHIPS

1. Society for Reproductive Biology and Comparative Endocrinology (SRBCE)
2. American Association of Cancer Research (AACR)
3. Radiation Research Society (RRS)

SERVING AS A REVIEWER/EDITOR

1. Scientific Reports- Nature
2. Journal of Toxicology, Hindawi Publication
3. OnLine Journal of Biological Sciences, Science Publication
4. Human and Experimental Toxicology, SAGE publications.
5. Biology- MDPI
6. Cancer –MDPI
7. International Journal of Case Reports and Clinical Images
8. Oncology and Cancer Research

PERSONAL INFORMATION

Date of Birth	12 th June, 1986
Languages known	English and Tamil
Nationality	Indian