Name and Qualification:

Dr. Natarajan Bhaskaran, M.Sc., PGDMLT., Ph.D.

Designation with Address of the Institution:

Professor,
Department of Biomedical Sciences,
Faculty of Biomedical Sciences, Technology and Research
Sri Ramachandra Institute of Higher Education and Research (SRIHER)
Chennai 600 116, Tamil Nadu, India.
Mobile: +91 9600043990
Email: natarajanbhaskaran@sriramachandra.edu.in, natarajanphd@gmail.com

About the Faculty:

Dr. Natarajan Bhaskaran, Professor in the department of Biomedical Sciences, SRIHER has his PhD in Pharmacology and Environmental Toxicology from University of Madras, Chennai, India. He pursued his post-doctoral research in Cancer chemoprevention and Immunology at the prestigious Case Western Reserve University, Cleveland, Ohio, US. Having more than 22 years of research and academic experience, he has significantly contributed to the field of Cancer chemoprevention and immunology through his astonishing research and publications. He was involved in several NIH projects at US and here, at Ramachandra, he has SERB grants sanctioned as PI as well as Co-PI, and few more grants have been submitted and are in the pipeline as principal investigator. He has more than 30 publications in various top-notch journals indexed in both PubMed and Scopus, and one of his important research work got published in Nature Communications, which is a highly reputed journal in scientific research with impact factor of 17.69. He has an h-index of 20 with more than 1400 citations and been serving as editorial board member and ad-hoc reviewer in various prominent international journals. Currently, his main research interest is in investigating the role of immune cells in the tumour microenvironment of cancer and the epigenetic regulations involved in it.

Education:

Institution and Location	Degree (UG/PG/ PhD	Year Conferred	Field of Specialization
University of Madras	Ph.D	2006	Pharmacology and Environmental Toxicology
Loyola College (Autonomous)	PGDMLT	2001	Medical Laboratory Technology
University of Madras	M.Sc	2000	Biochemistry
University of Madras	B.Sc	1997	Biochemistry

Teaching & Research Experience:

Institute	From	To	Designation
Sri Ramachandra Institute of Higher Education and Research, Chennai, India	Nov.2020	Till Date	Professor
Case Western Reserve University, Cleveland, USA	Sep.2008	Sep.2020	Research Associate
Natural Remedies Pvt. Ltd	Oct.2006	Jul.2008	Research Scientist
University of Madras	Feb. 2000	Nov. 2005	Doctoral Research

Training Experience (if any):

Mentored doctoral students, undergraduate, postgraduate students and lab technicians. Trained them on routine laboratory methods, experimental techniques, and analysis for almost two decades.

Research Interests:

Cancer Biology, Immunology, Obesity and Inflammation, Epigenetics, Pharmacological and Toxicology.

Research Projects Conducted:

Cancer chemoprevention: Investigated the cancer chemoprevention using extracts and active principles from medicinal plants targeting molecular signaling pathways in Prostate and Urinary Bladder Cancer. Includes - a) Role of Chamomile in preventing prostate and bladder cancer by teasing NFκB and NRF2-Keap1 pathways. b) Role of Lyc-O-Mato (Lycopene) in preventing urinary bladder cancer and prostate cancer. c) High Fat Diet induced inflammation and its mechanistic alterations in the prostate of mouse model and in prostate cancer cell lines.

Immunology and Cancer: Explored and studied the mechanism behind cross talk and functions of the immune cells at oral mucosa in the context of Oral Cancer and Oropharyngeal Candidiasis (OPC). Most importantly on the role of cytokines in Oral Cancer, OPC and Inflammatory Bowel Disease (IBD) with respect to T-helper

17 (Th17) and Regulatory T cells (Tregs) and their molecular mechanisms. Also, involved in finding the dysregulation and role of immune cells in normal and HIV clinical subjects.

Pharmacological Research: Investigated the pharmacological activity of various extracts from medicinal plants in animal models and in vitro conditions. Explored the mechanism of the drugs / targeted natural extracts and compounds using isolated perfused organ bath studies: Rat uterus, Rat ileum, Guinea pig ileum, Rat colon, Guinea pig vas deferens, Guinea pig tracheal chain etc., with isolated organ bath using both kymographic and (Pan Lab) 4 channels attached with AD Instruments – Power lab (Chart and Scope software).

Involved in NIH projects: Chamomile: A Cancer chemoprevention agent targeting prostate cancer, Mechanisms of TH17 and T Reg Cell Dysregulation in Oral Mucosal Inflammation during HIV Disease and internal CFAR project: Defining the role of CD4+FoxP3 + Regulatory T cells in immunopathogenesis of HIV disease.

Patents filled & Approved:

Not Applicable

Ph.D. Research Guidance:

In Process.

M.Phil. Research Guidance:

Not Applicable

Post graduate Project Guidance:

Interpretation of next generation sequencing data to identify inherited disease-causing variants in Indian Population

Anti-inflammatory properties of *Curcuma Longa* in animal models.

Anti-ulcer properties of GutGard^{TM} (Formulation) using in vivo models.

Undergraduate Project Guidance:

Expression profiling of sFRP4 and CASZ1 genes in various cancer cell lines

Exploring the expression of Casz1 and SFRP4 genes in normal, precancerous, and cancerous oral lesions from human subjects

Development and characterization of hydrogel-based scaffold for bone application.

Isolation and Characterization of Polysaccharide-protein fraction from Tamarindus Indica seed extract.

The combinational effect of hesperidin and Docetaxel on the prostate cancer cell line.

Cancer chemopreventive properties of Solanum Nigrum extracts and Diosmetin (Natural compound) in prostate cancer cell lines.

Conferences/Workshops/Seminars Organized:

Not Applicable

Conference presentations (Oral and Poster): Presented more than 30 research findings in various international conferences. Given below are some recent presentations.

S.No	Name of Author (s)	Title of papers presented	Name of Conference / Seminars etc.,	National/International (Specify)	Place	Year/Date
1	Natarajan Bhaskaran, Elizabeth Schneider and Pushpa Pandiyan.	Short-chain fatty acids regulate regulatory T cells and intestinal pathology during oral mucosal infection.	American Association of Immunologists (AAI	International	US	2019
2	Pushpa Pandiyan, Natarajan Bhaskaran, Elizabeth Schneider and Cheriese Quigley.	Role of short chain fatty acids in controlling Tregs and immunopathology during mucosal infection.	Mucosal Immunology Symposium (MICS)	International	UK	2018
3	Natarajan Bhaskaran, Fengchun Ye, Aaron Weinberg and Pushpa Pandiyan.	Role of Casz1 in Th17 cells and Experimental Autoimmune Encephalomyelitis (EAE) in mouse model.	Immunology Retreat – ITP	International	US	2017
4	Eswar Shankar, Natarajan Bhaskaran, Rajnee Kanwal, Sanjay Gupta.	Green tea polyphenols suppress tumor growth and invasion by targeting matrix metalloproteinases, RECK and TIMP-3, in a mouse model implanted with prostate tumors.	American Association of Cancer Research (AACR)	International	US	2017

Academic and/or Research awards:

Awarded "Research Fellow" - funded by University Grants Commission - University with Potential for Excellence (UGC-UWPFE) – Herbal Sciences for the year 2004 -2005.

Publications (Journals): Published more than 30 research articles in various well reputed national and international journals. Given below are few recent publications. Please click on the link below to access the other publications:

https://www.ncbi.nlm.nih.gov/pubmed/?term=Natarajan+Bhaskaran

S. No.	Name of Authors / Department	Title of Publication in full	National/ International (specify)	Title of Journal	Specify Indexed/Accredited/ Others	Year of Journal	Volume No.	Pages From - to
1	N Bhaskaran, E Schneider, F Faddoul, A Paes da Silva, R Asaad, A Talla, N Greenspan, AD Levine, D McDonald, J Karn, MM Lederman, P Pandiyan	Oral immune dysfunction is associated with the expansion of FOXP3+ PD-1+ Amphiregulin+ T cells during HIV infection	International	Nature Communications	DOAJ, MEDLINE, Web of Science, Scopus and Google Scholar.	2021	12 (1)	1-15
2	N. Bhaskaran, F. Faddoul, A. Paes da Silva, S. Jayaraman, P. Mamileti, A. Weinberg and Pandiyan P.	IL-1b-MyD88-mTOR axis promotes immune-protective IL-17A+Foxp3+ cells during mucosal infection and is	International	Frontiers in Immunology	PubMed, MEDLINE, PubMed Central (PMC), Scopus, Web of Science Google Scholar, Chemical	2020	Nov 6;11:	595936

		dysregulated with aging			Abstracts Service (CAS), Embase,			
3	Bhaskaran N, Quigley C, Paw C, Butala S, Schneider E, Pandiyan P.	Role of Short Chain Fatty Acids in Controlling T regs and Immunopathology During Mucosal Infection	International	Frontiers in Microbiology	PubMed, PubMed Central (PMC), Scopus, Google Scholar, CrossRef, CAS.	2018	Aug 24;9:	1995
4	Bhaskaran N, Liu Z, Saravanamuthu SS, Yan C, Hu Y, Dong L, Zelenka P, Zheng L, Bletsos V, Harris R, Harrington B, Weinberg A, Thiele CJ, Ye F, Pandiyan P.	Identification of Casz1 as a Regulatory Protein Controlling T Helper Cell Differentiation, Inflammation, and Immunity	International	Frontiers in Immunology	PubMed, MEDLINE, PubMed Central (PMC), Scopus, Web of Science Google Scholar, Chemical Abstracts Service (CAS), Embase,	2018	Feb 7;9	184

5	Bhaskaran N, Ghosh SK, Yu X, Qin S, Weinberg A, Pandiyan P, Ye F.	Kaposi's sarcoma-associated herpesvirus infection promotes differentiation and polarization of monocytes into tumor-associated macrophages	International	Cell Cycle	PubMed/Medline, Thomson Reuters, and Scopus	2017	16(17)	1611-1621
6	Bhaskaran N, Srivastava JK, Shukla S, Gupta S	Chamomile confers protection against hydrogen peroxide-induced toxicity through activation of Nrf2-mediated defense response	International	Phytotherapy Research	PubMed, MEDLINE, PubMed Central (PMC), Scopus, Web of Science Google Scholar, Chemical Abstracts Service (CAS), Embase,	2013	Jan;27(1)	118-25

Publications (Books and Monographs):

S. No.	Name of Author (s)	Title of Chapter	National/ International (Specify)	Title of Book	Publisher details	Year	Pages From – to
1	Gautham Chengizkhan, Natarajan Bhaskaran, R. Ileng Kumaran, and Ilangovan Ramachandran	Cancer Stem Cells and Tumour Aggressiveness	International	Cancer Stem Cells: New Horizons in Cancer Therapies	Springer Nature Singapore Pte Ltd	2020	137-154
2	Ezhilarasan Devaraj, Muralidharan Anbalagan, R.Ileng Kumaran, Natarajan Bhaskaran*	Immunity, stem cells, and aging	International	Stem Cells and Aging	Academic Press, Elsevier.	2021	89-101

Consultancy – UILIC- University Industry Linked Consultancy:

Not Applicable

Biomedical Sciences In-time Training Resource Person:

Not Applicable

Membership in University Committees: -

Board of Studies, Department of Pharmacology and Toxicology, University of Madras.

Member, Sri Ramachandra Center for International Collaboration (SRCIC).

Member, Sub-committee of Examinations, Department of Biomedical Sciences, SRIHER.

Any other relevant Content:

Professional Affiliations

Associate Member in American Association of Cancer Research (AACR).

Member in The American Association of Immunologists (AAI)

Editorial Board Member

Pharmacology of Anti-cancer drugs – Frontiers in Pharmacology (Associate Editor)
Frontiers in Cellular and Infection Microbiology - Microbiome in Health and Disease (Review Editor).
Frontiers in Immunology (Review Editor)
Frontiers in Oncology (Review Editor)
Frontiers in Pharmacology (Review Editor)
Frontiers in Pharmacology - Inflammation Pharmacology (Review Editor)
Cancer and Oncology Research (Reviewer Board Member)
Journal of Pediatrics and Clinical care (Editorial board member)
Journal of Clinical Microbiology and Immunology (Editorial board member)
International Journal on Current Trends in Drug Development & Industrial Pharmacy (Editorial Board Member)

Ad-Hoc reviewer – *Frontiers in Endocrinology*
Ad-Hoc reviewer - *Cancer and Oncology Research*
Ad-Hoc reviewer - *BMC Cancer*
Ad-Hoc reviewer – BMC Complementary and Therapies
Ad-Hoc reviewer - *Journal of Parenteral and Enteral Nutrition*
Ad-Hoc reviewer - *Oxidative Medicine and Cellular Longevity*
Ad-Hoc reviewer - *Scientific Reports*
Ad-Hoc reviewer – *Experimental Biology and Medicine*
Ad-Hoc Reviewer – *Biochemistry and Cell Biology*

Citations

https://scholar.google.com/citations?user=1yVw2lUAAAAJ&hl=en

Grants obtained /submitted at SRIHER:

a) Role of Casz1 in Oral Cancer – A pilot study towards its mechanism. PI, SERB-SRG, 2022 (Sanctioned).
b) Casz1 as an oral tissue marker in regulating anti-microbial peptides and microbiome in Periodontitis. PI, ICMR-Adhoc Extra mural grant, 2022.
c) Investigating the role of DEAD-box helicase, DDX20 in Wnt-driven ROS production in triple-negative breast cancer. As Co-PI, SERB-POWER, 2021 (Sanctioned).

d) Analysis of YAP/TAZ as a diagnostic marker and Hippo cross talk with Wnt/β catenin signaling in cervical cancer. As Co-PI, SERB-POWER, 2021.
e) Role of NFkB and Cancer stemness during curcumin induced chemosensitization against doxorubicin in colon cancer. As Co-PI, SERB-CRG, 2021.