

Curriculum Vitae

Venkateswarlu Raavi, M. Sc., M. Phil., Ph. D.

Assistant Professor

Department of Cell Biology and Molecular Genetics
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EDUCATION

Qualification	Institute	Year of passing
Ph.D. Human Genetics	Department of Human Genetics, Faculty of Biomedical Sciences, Technology and Research, SRIHER (Deemed to be University), Porur, Chennai-600116, TN, INDIA	2018
M.Phil. Biochemistry	Department of Biochemistry, University of Madras, Guindy, Chennai-600085, TN, INDIA	2012
M.Sc. Biochemistry	Sree Vidyanikethan Degree and PG College, Sri Venkateswara University, Tirupati, AP, INDIA	2009

EMPLOYMENT

Designation	Institute	Duration
Assistant Professor	Department of Cell Biology and Molecular Genetics, Sri Devaraj Urs Academy of Higher Education and Research (Deemed to be University), Tamaka, Kolar-563 103, Karnataka, INDIA	(14/10/2019-till date)

TEACHING

Title	Course	Duration
Post graduation	M. Sc Molecular Biology & Human Genetics, M.Sc MLT	2019-Till date
Under graduation	BASLP and CND courses	2022-Till date
MD pathology & Ph.D	MD pathology and Ph. D course work	2021-Till date

RESEARCH EXPERIENCE

Title	Funding body	Duration
Senior Research Fellow	Council of Scientific and Industrial Research	April 2017-December 2018
Senior Research Fellow	Department of Science and Technology	June 2016-November 2016
Junior Research Fellow	Life Science Research Board-DRDO	April 2013-April 2015

AWARDS

Award	Year and scores
GATE	2009 (Score 466, 96 percentile); 2010 (Score:382); 2011 (Score 363)
CSIR-SRF (Direct)	April 2017-December 2018

RESEARCH PROJECTS

S. No	Project	Duration	Name of the funding Agency and Role	Amount (Rs.)
External Grant (Collaborator)				
1	Establishment ----- gene expression biomarker	2 years (2020-22)	AERB, Govt of India. Institutes: SRIHER, Chennai (Principal Investigator) and SDUAHER, Kolar (Principal Collaborator)- Completed	28,95,675/-
Consultancy Project (Co-Investigator)				
2	COVID-19 consultancy project	6 months (2020-21)	M/s Jagdale industries Pvt. Ltd, Banglore, (Co-investigator)- Completed	3,50,000/-
SDUAHER funded Projects (Co-Investigator)				
3	Influence of -----patients undergoing radiotherapy	2 years (2021-23)	SDUAHER, Kolar (Principal investigator)	4,95,000/-
4	Study on extent-----mine-tailing area of KGF	2 years (2021-23)	SDUAHER, Kolar (Co-investigator)	5,00,000/-
5	Microbial ---tertiary care hospital	2 years (2021-23)	SDUAHER, Kolar (Co-investigator)	8,00,000/-
6	Karyotyping ---- ---confirming malignancy	2 years (2021-23)	SDUAHER, Kolar (Co-investigator)	1,20,000/-
7	Radiation ---- micro flora	2 years (2020-22)	SDUAHER, Kolar (Co-investigator)	1,97,240/-
8	Herpes simplex virus - by PCR in RLJH	2 years (2020-21)	SDUAHER, Kolar (Co-investigator)	2,00,000/-

RESEARCH GUIDANCE

Course	Ongoing	Completed
Ph. D guidance	One (Guide)+One (co-guide)	One
M. Sc student dissertations	4 ongoing	3 completed

REVIEWER FOR JOURNAL

Journal name	Publisher	Role
PLOS ONE	PLOS	Reviewer
Mutation Research	Elsevier	
Scientific Reports	Nature	
Genes and Environment	BMC group	
Current Medicinal Chemistry	Bentham	
JCBS	SDUAHER	

COVID-19 qRT-PCR

Standardized the **COVID-19** testing using qRT-PCR and obtained **NABL accreditation** (more than **70,000 tests** were performed so far).

MEMBERSHIPS

Society for Radiation Research: Full Member (SRR/FM-43/2020/0093).

Indian Society For Radiation Biology: Life member (ISRB/R-21/395)

ACADEMY ADMINISTRATIVE WORKS

Committee/Activity	Role
NAAC 7 criteria	Core member
Research and Development Cell	Deputy Coordinator
NRI cell	Member
Students Research Committee, SDUMC	Member
Institutional Sports Committee, AHS	Member
MOU between SRIHER, Chennai and SDUAHER, Kolar.	Signed MOU and also successfully completed one research project from AERB
Value added course in Cyto Genetic Lab Technology	2021, 2022, 2023

AREAS OF SPECIALIZATION

Radiation biology and biodosimetry: To identify, standardize and validate the markers (related to DNA damage: Chromosomal aberrations, micronucleus, gamma-H2AX, gene and micro RNA expression) for radiation absorbed dose measurement and triage during large scale radiological accidents.

Low dose radiation effects: To find the suitability of the standardised markers to measure the effects due to low dose medical radiation exposures.

Diabetes and DNA damage: Measurement of diabetes induced DNA damage using gene expression markers.

Genotoxicity using micronucleus assay: Levels of genotoxicity of lymphocytes in KGF residents using micronucleus assay.

Detection of viral DNA using real time PCR: Respiratory viral detection using qPCR.

Small for gestational age: Role of insulin like growth factor in Small for Gestational Age.

Sleep science: Sleep induced neuronal and behavioral changes in rats.

Normal tissue toxicity: The cancer patients undergoing radiotherapy showed 10 to 15% normal tissue toxicity. I am currently working on the suitability of the standardised markers to measure the normal tissue toxicity.

TECHNICAL SKILLS

➤ **DNA Damage analysis (immediate and late damage): γ -H2AX foci assay-** γ -H2AX foci immunocytochemistry (direct measure of DNA DSB) analysis in peripheral blood lymphocytes of human samples exposed to ionizing radiation using **epifluorescence, confocal microscopy, and flow cytometry. Dicentric Chromosomal and Micronucleus Assay-**Culturing of blood lymphocytes, harvesting, slide casting, and **analysis of dicentric chromosomes** and micronucleus using light microscopy.

➤ **Gene and miRNA expression analysis:** Isolation of RNA from blood samples of cancer patients using Trizol, Ribopure kit, c-DNA conversion using reverse transcription PCR and quantification of **gene expression real-time PCR (Both Taqman and Syber green chemistry).**

➤ **Animal Cell culture:** Working knowledge on growth and maintenance of both suspension (**CCRF-CEM, MOT**) and adherent mammalian cell lines (**2D/3D**). **Primary cell culture (fibroblasts) (AG1522, HADF, 10T1/2), Cancerous cell lines (BMG, MCF7), Mutant cell lines (GM4405, M059J, M059K) & Biological assays** such as

MTT, Apoptosis, ROS measurements. **Co-culture methodology (bystander response)** and genomic instability measurement using MN, γ -H2AX assay and Cell Cycle.

➤ **Animal handling:** Working knowledge on handling of laboratory experimental animals (Mice/Rat), separation of brain, preparation of sucrose gradient solution in order to isolate myelin using ultracentrifuge, biochemical estimations, SDS-PAGE electrophoresis of myelin proteins from mice brain, SDS Gel electrophoresis, various staining methods, western blotting and processing of tissue sample for scanning electron microscopy imaging.

LIST OF PUBLICATIONS

S. No	Author(s)	Title	Name of Journal	Volume	Page	Year
1	Nandhini K, Teena K, Venkateswarlu Raavi , Emmanuel Bhaskar, Swathy M, Venkata Sai PM Satish Srinivas K, Shangamithra V, Venkatachalam P	Candidate gene expression in regional population and its relevance for radiation triage	Cytogenetic and Genome Research	Special Issue	1-13	2023
2	Konakanchi, S, Venkateswarlu Raavi , MI, H. K., & Shankar Ms, V	Impact of chronic sleep deprivation and sleep recovery on hippocampal oligodendrocytes, anxiety-like behavior, spatial learning and memory of rats	Brain Research Bulletin	193	59-71	2023
3	M N Nithya, J Krishnappa, S R Sheela, Venkateswarlu Raavi	The Role of Insulin-like Growth Factor-Axis and Mitotic Index in South Indian Neonates with Small for Gestational Age	Fetal Pediatric Pathology	17	1-11	2022
4	S. Konakanchi, Venkateswarlu Raavi , H.K. MI, V. Shankar MS	Effect of chronic sleep deprivation and sleep recovery on hippocampal CA3 neurons, spatial memory and anxiety-like behavior in rats	Neurobiology of Learning and Memory	187	107559	2022
5	Aishwarya, T. A., Divya K. Mohan, K. Nandhini, Venkateswarlu Raavi , and Venkatachalam Perumal	Impact of X-radiation in the management of COVID-19 disease	World Journal of Radiology	7	219-228	2022
6	Venkateswarlu Raavi , Perumal V, & FD Paul S	Potential application of γ -H2AX as a biodosimetry tool for radiation triage	Mutation Research/Reviews in Mutation Research	787	108350	2021
7	Visweswaran S, Venkateswarlu Raavi , Basheerudeen SAS, Kanagaraj K, Prasad A, Sekaran	Comparative analysis of physical doses and biomarker changes in subjects underwent Computed Tomography,	Mutation Research	870-871	503404	2021

	TSG, Pattan S, Shanmugam P, Ozimuthu A, & Joseph S	Positron Emission Tomography-Computed Tomography, and interventional procedures				
8	Venkateswarlu Raavi , J Surendran, Karthik K, Solomon F.D Paul, K Thayalan, J Arunakaran, P Venkatachalam	Measurement of γ -H2AX foci, miRNA-101 and gene expression as a means to quantify radiation absorbed dose in cancer patients who had undergone radiotherapy	Radiation and Environmental Biophysics	58(1)	69-80	2019
9	Akshaya P, Shangamithra V, Karthik K, Venkateswarlu Raavi , Arunan M, Venkatachalapathy E, Paneerselvam S, Jose MT, Annalakshmi O, Venkatachalam P	¹⁸ F-FDG PET/CT scanning: Biological effects on patients: Entrance surface dose, DNA damage, and chromosome aberrations in lymphocytes	Mutation Research Genetic Toxicology and Environmental Mutagenesis	838	59-66	2019
10	Sribala V, Karthik K, Venkateswarlu Raavi , Shanmugapriya D, Vinod Kumar Panicker, R Krishnamoorthy, Adayabalam Balajee, P Venkatachalam	Does proliferation capacity of lymphocytes depend on human blood types?	Journal of Cellular Biochemistry	120(4)	5722-5728	2019
11	Subhashree M, Venkateswarlu Raavi , Karthik K, Shangamithra V, Venkatachalam P	DNA damage and the bystander response in tumor and normal cells exposed to X-rays	Mutation Research Genetic Toxicology and Environmental Mutagenesis	821	20-27	2017
12	Safa Abdul Syed Basheerudeen, Karthik Kanagaraj, M.T. Jose, Annalakshmi O, S. Paneerselvam, Sudha Pattan, Santhosh Joseph, Venkateswarlu Raavi , Venkatachalam P	Entrance surface dose and induced DNA damage in blood lymphocytes of patients exposed to low-dose and low-dose-rate X-irradiation during diagnostic and therapeutic interventional radiology procedures	Mutation Research Genetic Toxicology and Environmental Mutagenesis	818	1-6	2017
13	P. Venkatachalam, M. Chinnadurai, Venkateswarlu Raavi , Karthik K, Shangamithra V Solomon F. D. Paul	Perspectives on the role of bystander effect and genomic instability on therapy-induced secondary malignancy.	Journal of Radiation and Cancer Research	8 (1)	53-60	2017
14	Kanagaraj K, Venkateswarlu Raavi , Visweswaran S, Selvan TG,	Technical note on cytokinesis-arrested binucleated cell and micronucleus assay	Journal of Radiation and Cancer Research	8(4)	180	2017

	Dhanashekar S, Perumal V.					
15	Venkateswarlu Raavi , Basheerudeen SA, Jagannathan V, Joseph S, Chaudhury NK, Venkatachalam P	Frequency of gamma H2AX foci in healthy volunteers and health workers occupationally exposed to X-irradiation and its relevance in biological dosimetry	Radiation and Environmental Biophysics	55 (3)	339-47	2016
16	Safa ASB, Sakina M, Venkateswarlu Raavi , Bhavani M, Santosh J, Muralidharan TR, Venkatachalam P	Assessment of early and late DNA damages in interventional radiologist exposed to protracted low dose and dose rate of X-radiation	International Journal of Low Radiation	10(3)	198-209	2016
17	Swapnaja Gulawani, Venkateswarlu Raavi , S. Suresh, P. Venkatachalam	Pattern of chromosome aberrations and expression profile of p53 ^{ser15} and BAX protein in healthy subjects and cancer patients	Journal of Radiation and Cancer Research	7	42-9	2016
18	Venkateswarlu Raavi , Tamizh SG, Bhavani M, Kumar A, Alok A, Karthik K, Kalra N, Vijayalakshmi J, Paul SF, Chaudhury NK, Venkatachalam P	Mean frequency and relative fluorescence intensity measurement of gamma-H2AX foci dose response in PBL exposed to gamma-irradiation: An inter- and intra-laboratory comparison and its relevance for radiation triage	Cytometry Part A	87(12)	1138-46.	2015
19	Perumal V, Gnana Sekaran TS, Venkateswarlu Raavi , Basheerudeen SA, Kanagaraj K, Chowdhury AR, Paul SF	Radiation signature on exposed cells: Relevance in dose estimation	World journal of Radiology	7(9)	266-278	2015
Under review						
20	Aishwarya TA, Venkateswarlu Raavi , Satish Srinivas K, Ilangovan R, Venkatachalam P	Insights on the radiation-induced adaptive response at the cellular level and its implications in cancer therapy	Cytogenetics and Genome Research	Under review		2023
21	M N Nithya, J Krishnappa, S R Sheela, Venkateswarlu Raavi	Methylation status of IGF-axis gene promoters in the placental tissue of neonates with Appropriate and Small for Gestational Age	Growth Hormone and IGF Research	Under review		2023
22	M N Nithya, J Krishnappa, S R Sheela, Venkateswarlu Raavi	Alterations in the levels of the IGF-axis components in SGA, AGA, and LGA neonates	Growth Factors	Under review		2023

PRESENTATIONS/CONFERENCES

Invited talk: γ -H2AX practical demonstration during SRR-international school, SRIHER, Chennai, 2023.

Invited resource person for workshop: Kristu Jayanthi College, Bangalore, 2023.

Invited talk: *Radiation and DNA damage*, Fluorosis & Genetic Disease: A Missing Link” organized by the Department of Biochemistry, Sri Devaraj Urs Medical College, Kolar on 14th March 2022.

Invited talk: *Gamma H2AX, Gene and miRNA expression as Biomarkers of Radiation Induced DNA Damage*. “Second International School of Radiation Research (ISRR-2020), Radiation Induced DNA damage response: Mechanisms to Human Health Implications” organized as E-Conference mode during **Sept. 6-20, 2020**.

Poster Presentation: *FDXR* gene expression; a potential biomarker for rapid radiation triage, Nandhini K, Teena Koshy, Satish Srinivas K, Venkata Sai PM, Venkateswarlu Raavi, Venkatachalam P, ICRB, Bikaner, 19-21st Jan 2022.

➤ **Practical demonstration:** “Gamma-H2AX assay for DSB analysis” in first International School on Radiation Research (ISRR-2017) radiation carcinogenesis: mechanisms and experimental models organized by Annamalai University during 2 to 4th Feb-2017.

➤ **Poster:** “*Estimation of radiation absorbed dose in patients underwent radiotherapy using γ -H2AX and miRNA101*” at International Conference on Radiation Research: Impact on Human Health and Environment (ICRR-HHE 2018) organized by University of Hyderabad, Hyderabad, India, between 1-4th Feb-2018

➤ **Oral:** “*Establishment and validation of γ -H2AX foci assay in human peripheral blood lymphocytes for radiation triage and dose estimation*” at “international conference on radiation biology organized by SRM University, Chennai, India, between 9 to 11th Nov-2016.

➤ **Poster:** “*Significance of γ -H2AX Foci Baseline Frequency in Radiation Triage*” at “International conference on radiation research: impact on human health and environment (ICRR-HEE 2016)” organized by Society for Radiation Research (SRR), Baba Atomic Research Centre, Mumbai, India, between 11 to 13th Feb-2016.

➤ **Poster:** “*Analysis of the γ -H2AX foci frequency in the blood lymphocytes exposed in-vitro to X-irradiation for triage bio-dosimetry*” at “international conference on radiation biology organized by Institute of Nuclear Medicine & Allied Health Sciences (INMAS), Delhi, India, between 11 to 13th Nov-2014.

➤ Participated in “International Conference on Radiation Biology 2018” organized by KS Hegde Medical Academy Manipal between 4-6th October 2018.

WORKSHOPS

➤ CME on “*Consent in Clinical Practice and Research*” organized by University Bioethics Center, Sri Devaraj Urs Academy of Higher Education & Research on Monday, 23rd Dec-2019

➤ “*Training of Teachers*” workshop organized by University Department of Medical Education, Sri Devaraj Urs Academy of Higher Education & Research, Kolar-563101 from 28th to 30th Nov-2019.

➤ “*Indo-US Workshop on Drug Repurposing for Improving Radiotherapy of Cancer*” Satellite meeting of the Indian Cancer Congress 2017, organized by SRMC, Porur, Chennai on 13 Nov-2017.

➤ “*Workshop on Statistical genomics and genetics*” organized by CR Rao Advanced Institute of Mathematics, Statistics and Computer Science, University of Hyderabad, 26 to 30th Dec-2015.

➤ “*International workshop on advanced techniques in genomics research*” organized by Madras Diabetic Research Foundation, Chennai between 27 to 30th Jan-2015.

➤ Training workshop on “*Advances in Radiation biology*” organized by Institute of Nuclear Medicine & Allied Health Sciences (INMAS), Delhi, India on 22nd to 23rd January 2014.

➤ “Collaborative Institutional Training Initiative (CITI) in biomedical research course for biomedical researchers” organized by Sri Ramachandra University 2014.

PERSONAL INFORMATION

Nationality: Indian
Gender: Male
Date of birth: 05th August 1986
Category: General
Marital status: Married
Languages: Telugu, English, Tamil

PRESENT ADDRESS

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References

Project Investigator/Mentor

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