

**Name:** P. Venkatachalam

**Degree:** D.Sc

**Designation:** Professor & Head (Human Genetics) and Associate Dean (Research)

**Experience:** 21 years

**Clinical Specialty:** Cytogenetic diagnosis

**Research interest:** Radiation Biology, Genomic Instability, Non-targeted effects of ionizing radiation exposure

**Awards:**

- Senior Research Fellow extended, Council of Scientific and Industrial Research, Human Resource Development Ministry, Government of India, April, 1999
- Visiting Scientist, Indira Gandhi Centre for Atomic Research, Kalpakkam, India, 602 102, India. July 1998.
- Junior, Senior Research Fellowship & Lectureship, University Grants Commission, Human Resource Development Ministry, Government of India, June 1992 –May 1997.
- SLET, Eligible for Lectureship in India, Government of Tamilnadu, India, June-1992

**Membership:**

- Life member of Indian Association for Radiation Protection (IARP), Indira Gandhi Centre for Atomic Research, Kalpakkam, India (1996)
- Life member of Indian Society for Radiation Biology (ISRB), Indira Gandhi Centre for Atomic Research, Kalpakkam, India (2008)
- Life member of Indian Society of Human Genetics (ISHG), CCMB, Hyderabad (2010)
- Life member of Society for Radiation Research, BARC, Mumbai (2015)

**Associateship / Fellowship:**

- Post – Doctoral Fellowship, New Jersey Medical School, New Jersey, USA, Feb 2003.

**Grants/ Patents:**

1. A Tiered Biodosimetry Approach for the Management of Large Scale Radiological and Nuclear Emergencies (Duration 2 years from July 2023, 64.45 lakhs) **Funded from SPARC, INDIA, Ongoing).**
2. Chromosomal sensitivity in directly irradiated and bystander normal and cancer cells after low and high LET irradiation (Duration 3 years from April 2023, 30.5 lakhs) **Funded from BRNS, INDIA, Ongoing.**
3. Establishment and capacity building for rapid radiation triage and dose estimation using gene expression biomarker ((Duration 2 years from Feb 2021, 35 lakhs) **Funded from AERB, INDIA, Completed).**
4. Standardization and testing of Premature Chromosome Condensation (PCC) assay for radiation triage and dose estimation. (Duration 3 years from October 2017, 24.98 lakhs) **Funded from IGCAR. DAE, INDIA, Completed).**
5. Biological effects of low dose alpha particle radiation exposure to blood lymphocytes for biodosimetry (Duration 3 years from October 2014, 50.85 lakhs) **Funded from AERB, INDIA, Completed).**

6. Biological effects of low dose ionizing radiations received during diagnostic radiological procedures. (Duration 3 years from February 2013, 46.23 lakhs) **(Funded from SERB, DST, Govt. of India, Completed)**
7. Standardization and establishment of  $\gamma$ -H2AX assay for triage biodosimetry (Duration 2 years from February 2013, 24.9 lakhs) **(Funded from LSRB, DRDO, Govt. of India, Completed)**
8. Inter laboratory comparison of radiation dose response calibration curve using dicentric assay". (Duration 2 years from January 2011, 14.9 lakhs) **(Funded by Institute of Nuclear Medicine & Allied Science, DRDO, Govt. of India, Completed)**
9. Cytogenetics of idiopathic mental retardation. (Duration 3 years from January 2010, 20.9 lakhs), **(Funded from ICMR, India, Completed as Co-investigator)**
10. Genomic instability in Bystander Human Cells and their Progeny exposed to Ionizing Radiation using 3-D cultures (Duration 3 years from January 2007, 22 lakhs), **(Funded from DST, India Completed)**
11. Study on the genetic variation of HLA-G alleles in couples with unexplained recurrent spontaneous abortion in south India. (Duration 3 years from February 2006, 10 lakhs, **(Funded from DST, INDIA Completed)**
12. Biological Dosimetry Preparedness - Validation on the measurement of translocation frequency by chromosome painting and G-banding for dosimetry (Duration 3 years from December 2002, 18.5 lakhs, **(Funded from AERB, INDIA, Completed).**

#### **Publications (RECENT THREE years):**

1. Nandhini Kannan, Teena Koshy, Venkateswarlu Raavi, Emmanuel Bhaskar, Swathy Moorthy, Venkata Sai Pulivadula Mohanarangam, Satish Srinivas Kondaveeti, Shangamithra Visweswaran and **Venkatachalam, P** (2023), Candidate gene expression in regional population and its relevance for radiation triage, Cytogenetics & Genome Research **(10.1159/000531258)**.
2. Balunathan N, Rani G U, **Venkatachalam P**, Kumarasamy P. Single nucleotide polymorphisms of Interleukin - 4, Interleukin-18, FCRL3 and sPLA2IIa genes and their association in pathogenesis of endometriosis. **Mol Biol Rep. 2023 Mar 11. doi: 10.1007/s11033-023-08316-5 (PMID: 36905404)**.
3. Géraldine Gonon, Sonia M. de Toledo, **Venkatachalam P**, Jean-Paul Jay-Gerin, Edouard I. Azzam, Impact of the redox environment on propagation of radiation bystander effects: The modulating effect of oxidative metabolism and oxygen partial pressure, **Mutation Research, (883–884), 2022, 503559, doi.org/10.1016/j.mrgentox.2022.503559**.
4. Aishwarya T A, Divya K Mohan, K Nandhini, Venkateswarlu Raavi, **Venkatachalam P** (2022), Impact of X-radiation in the management of COVID-19 disease, **W. J. Radiology., DOI: https://dx.doi.org/10.4329/wjr.v0.i0.0000**
5. C. Meenakshi, **P. Venkatachalam**, K. Satish Srinivas, S. Chandrasekaran, B. Venkatraman (2022), Chromosome length ratio as a biomarker of DNA damage in cells exposed to high dose ionizing radiation, **Mutation Research, 879–880, 503501**.
6. Shangamithra Visweswaran, VenkateswarluRaavi, SafaAbdul Syed Basheerudeen, Karthik Kanagaraj, Akshaya Prasad, Sudha Pattand Panneerselvam Shanmugam, Santhosh Joseph, **Venkatachalam, P** (2021) Comparative analysis of physical doses and biomarker changes in subjects underwent Computed Tomography, Positron Emission Tomography-Computed Tomography, and interventional procedures, **Mutat. Res., 870-871, 503404. doi.org/10.1016/j.mrgentox.2021.503404 (I.F.2.89)**
7. Eric Gregoire, Joan Francesc Barquiner, Gaetan Gruel, Mohamedamine Benadjaoud, Juan S. Martinez, Christina Beinke, Adayabalam Balajee, Philip Beukes, William F. Blakely, Inmaculada Dominguez, Pham Ngoc Duy, Octávia Monteiro Gil, Inci Güçlü, Kamile Guogyte, Savina Petrova Hadjidekova, Valeria Hadjidekova, Prakash Hande, Seongjae Jang, Katalin Lumniczky, Roberta Meschini, Mirta Milic, Alegria Montoro, Jayne Moquet, Mercedes Moreno, Farrah N. Norton, Ursula Oestreicher, Jelena Pajic, Laure Sabatier, Sylwester Sommer, Antonella Testa, Georgia Terzoudi, Marco Valente, **P. Venkatachalam**, Anne Vral, Ruth C. Wilkins, Andrzej Wojcik, Demetre Zafiroopoulos & Ulrike Kulka (2021) RENE Inter-Laboratory comparison 2017: limits and pitfalls of ILCs, **Int. J. Radiation Biol., Int. J. Radiation Biol., 10.1080/09553002.2021.1928782. (I.F.2.36)**

8. C. Meenakshi, **P.Venkatachalam**, S. Chandrasekeran, B.Venkatraman (2021) Construction of dose response curve for 6MV LINAC X-rays using Premature Chromosome Condensation assay for radiation dosimetry. **Applied Radiation and Isotopes** [10.1016/j.apradiso.2021.109729](https://doi.org/10.1016/j.apradiso.2021.109729) (I.F.1.9)
9. Tamizh Selvan G, Karthik, K and **Venkatachalam P** (2021) The relative biological effectiveness of high-energy clinical 3 MV and 6 MV X-rays for micronucleus induction in human lymphocytes, **Int. J. Radiation Biol.**, [doi.org/10.1080/09553002.2021.1906972](https://doi.org/10.1080/09553002.2021.1906972). (I.F.2.36)
10. Venkateswarlu Raavi, **P. Venkatachalam** and Solomon F.D. Paul (2021), Potential application of  $\gamma$ -H2AX as a biodosimetry tool for radiation triage. **Mutat. Res.**, **787:108350** ([doi.org/10.1016/j.mrrev.2020.108350](https://doi.org/10.1016/j.mrrev.2020.108350)). (I.F.5.67)
11. Shangamithra Visweswaran, Santhosh JosephJegadesan Dhanasekeran, S. Panneerselvam M.T. Jose, Annalakshmi Ozhimuthu, S, **Venkatachalam. P**, (2020) Exposure of patients exposed to low-dose X-radiation during neuro-interventional imaging and procedures: Dose estimation and analysis of gamma-H2AX foci and gene expression in blood lymphocytes. **Mutat. Res.**, [doi.org/10.1016/j.mrgentox.2020.503237](https://doi.org/10.1016/j.mrgentox.2020.503237)(I.F.2.89)
12. K. Kanagaraj, V. Rajan, Badri N. Pandey, K. Thayalan and **P. Venkatachalam** (2019), Primary and secondary bystander effect and genomic instability in cells exposed to high and low linear energy transfer radiations, **Int. J. Radiation Biol.**, 95, (12): 1648-1658, [doi.org/10.1080/09553002.2019.1665208](https://doi.org/10.1080/09553002.2019.1665208) (I.F.2.36)
13. Shangamithra Visweswaran, Santhosh Joseph, Vinay Hegde S, M.T. Jose, Annalakshmi Ozhimuthu, S, Venkatachalam. P, (2019) DNA damage and gene expression changes in patients exposed to low-dose X-radiation during neuro-interventional radiology procedures, **Mutat Res.**, **844:54-61**. [doi.org/10.1016/j.mrgentox.2019.05.011](https://doi.org/10.1016/j.mrgentox.2019.05.011) (I.F.2.89)
14. Karthik K, Vasumathy R, Badri N. Pandey, Sivasubramanian K, Solomon F.D. Paul, **Venkatachalam P** (2019) Direct and bystander effect in human blood lymphocytes exposed to 241Am alpha particle and its relative biological effectiveness using chromosomal aberration and micronucleus assay. **Int. J. Radiation Biol.**, 95, (6), 725–736, [doi.org/10.1080/09553002.2019.1589018](https://doi.org/10.1080/09553002.2019.1589018) (I.F.2.36).
15. Akshaya Prasad, Shangamithra Visweswaran, Karthik Kanagaraj, Venkateswarlu Raavi, M. Arunan, E. Venkatachalapathy, S. Paneerselvam, M.T. Jose, Annalakshmi Ozhimuthu, and **Venkatachalam P** (2019), 18F-FDG PET/CT scanning: Biological effects on patients: Entrance surface dose, DNA damage, and chromosome aberrations in lymphocytes. **Mutat Res.**, **838: 59–66**, [doi.org/10.1016/j.mrgentox.2018.12.010](https://doi.org/10.1016/j.mrgentox.2018.12.010) (I.F.2.89)
16. Venkateswarlu Raavi, J. Surendran, K. Karthik, Solomon F. D. Paul, K. Thayalan, J. Arunakaran and **P. Venkatachalam** (2019), Measurement of  $\gamma$ -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.(DOI 10.1007/s00411-018-0767-0) (I.F.1.32)

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