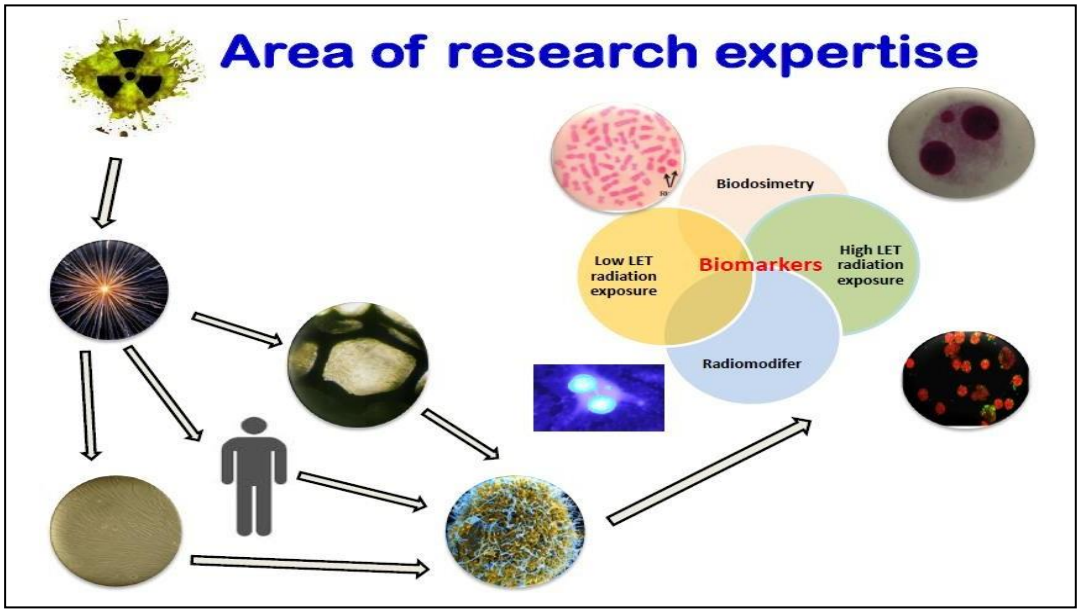
P. Venkatachalam, M.Sc., Ph.D., D.Sc
Professor of Human Genetics,
Associate dean (Research),
Department of Human Genetics,
Sri Ramachandra Institute of Higher Education &Research, (DU),
Porur, Chennai, Tamil Nadu – 600 116, India.
☎: (91) 044-24768027-33 ext 237
🖷: +91-(0)44 – 24767008
💻: venkip@sriramachandra.edu.in

I. Educational Qualification

Duration	Degrees	Name & Address of the Institutions
April 2017	D.Sc	Sri Ramachandra University, Porur, Chennai, 600 116, India.
2003-2004	Post-doctoral Fellowship	New Jersey Medical School, Newark, New Jersey, 07103, USA.
1993-1999	Ph.D	Health & Safety Division, Indira Gandhi Centre for Atomic Research, Kalpakkam, India, 602 102, India.
1990-1991	M.Phil	Dept. of Endocrinology, PGIBMS, Taramani, University of Madras, T.Nadu, India, 600 113.
1988-1990	M. Sc	Dept. of Zoology, Presidency College, University of Madras, T.Nadu, India, 600 005
1985-1988	B. Sc	Dept of Zoology, K.K College, Velur (Namakkal), University of Madras. India, 638 182.

Area of research Expertise: Radiation Biology



Biodosimetry: International Commission on Radiological Protection (ICRP) has laid down the permissible limits of radiation exposure to radiation workers and to the general public. While the amount of radiation exposure received by occupational workers is monitored, by physical dosimeters like thermoluminescence dosimeter (TLD) and film badge, for the general public it is not a mandatory. However, in practice the over-exposure recorded by physical dosimeter needs to be confirmed with biological dosimeter. In addition to confirming the dose recorded by physical dosimeters, biological dosimeters play an important role in estimating the doses received during accidental conditions. Biodosimetry, dose estimation based on the relationship between various biomarkers and the amount of absorbed dose. During 1993-1995, I have standardized methodologies for translocation measurements using fluorescence in-situ hybridization in addition to chromosomal aberrations and micronuclei techniques in peripheral blood exposed in-vitro to ionising radiation to quantify the radiation absorbed dose (Venkatachalam et al., 2000). ***Further, the suitability of the standardised techniques to quantify the radiation absorbed dose in occupational exposures was confirmed in cancer patients underwent radiotherapy (Venkatachalam et al., 1999) and occupational workers exposed to ionising radiation (Venkatachalam et al., 2001).*** As a continuation of pre-doctoral research work, to increase the sensitivity of dose estimation a project was sanctioned from the Atomic Energy Regulatory Board of India (AERB). The project work was carried out under my supervision and completed at the Human Genetics Department of Sri Ramachandra University between 2002 and 2005 (Haur et al 2006). ***The successful completion of the project with our expertise,theAERBofIndiahasaccreditedthedepartmentasareferralcentrefor***

biodosimetry, which is the first non-DAE laboratory accredited by the AERB. The same was inaugurated by honourable Minister of Health and Family welfare on 19th September 2007.

Laboratory inter-comparisons also help to harmonize protocols such as culture conditions, scoring criteria and statistical analysis. This harmonization is essential if laboratories are to set up networks to respond to a mass casualty event in which the number of potentially exposed individuals to be analysed exceeds the response capabilities of the local responders. The mutual assistance of several laboratories is required in such cases to increase the number of samples handled and to achieve faster availability of lab results. To accomplish this, in 2007, the WHO initiated "BioDoseNet", a network of more than 30 laboratories around the world and implemented the revised regulations pertaining to health, including the field of radio-nuclear incidents. The need for networking and quality assurance in biodosimetry is quite understandable and quite well established in many countries. ***To maintain and continue the accreditation, an inter-laboratory exercise on the scoring of aberrations induced by Gamma and X-irradiation (In-vitro exposure of blood lymphocytes) was conducted between Sri Ramachandra University and Institute of Nuclear Medicine and Allied Science, DRDO, Delhi and it was first of its kind in India (Bhanavni et al., et al., 2014, Bakkiam et al., 2015, Tamilselvan et al., 2015, Venkateswaralu et al., 2015).***

Low dose radiation and Health Effects

It has long been considered that the important biological effects of ionising radiation in a cell population are direct consequences of DNA damages occurring in the irradiated cells: anun-repaired or mis-repaired DNA damage in these cells is responsible for genetic effects of radiation, when exposed high dose and dose rates of radiation. However, mounting evidence has been generated by many laboratories, has been indicating that non-irradiated bystander cells in the vicinity of irradiated cells also exhibit biological effects known as "bystander response' reported to operating at very low doses of radiation. These bystander responses have been suggested to amplify the consequences of radiation; however the exact molecules involved in transmission of such effects is yet to be identified. ***We have generated the evidence for the first time that radiation induced oxidants are biologically similar to those generated by endogenous oxidative metabolism***. These studies are not only fundamental to our understanding of normal cell cycle progression and the cellular response to ionising radiation, but also suggest new strategies to halt the propagation of cancer cells (Venkatachalam et al., 2005; 2007). The oxidants are considered to mediate the non-targeted effects of losing radiation and their action can be modulated by altering the endogenous sources like NADPH oxidase. ***Further it was demonstrated that, the response of cells growing in tissue culture plates are entirely different from 3-D cultures followed by radiation exposures (de Toledo et al.,2006).***

Completed a DST sponsored project (DST/SR/HS/77/2005) to study the role of oxidants and their mechanism of actions in a 3D-model system exposed to radiation to study the bystander effects of ionising radiation and its long term consequences. The obtained results shows that chemotherapeutic drug the bleomycicn (BLM) and necoacrcinostatain (NCS) is able to cause DNA damage through bystander effects in WI-38, hBMSC, A-549, NCI-H23 and PBL similarto

X-irradiation. ***The results showed that the hBMSC are more sensitive to NCS than PBL than differentiated cells (Chinnadurai et al., Int. Journal of Radiat. Biol 2011).*** Further, magnitude of bystander response was more pronounced in 3D cultures ($p<0.001$) than 2D cultures and cell with wild type p53, which suggests that the manifestations of the bystander response depends on both the p53 status of the cell type and the growth architecture. Furthermore, growth architecture greatly influenced the persistence of BLM induced DNA damage in directly exposed and bystander cells (***Chinnadurai et al., 2013).*** Of late we have confirmed that BLM induced bystander response is cell dependent as BMG-1, a glioblastoma cells do not secret but response to bystander signals from other cell lines (***Safa et al., 2013***).

Currently, I am in the processes of investigating the quantification of absorbed dose and its biological effects of very dose ionising radiations received during diagnostic and therapeutic radiation imaging such as computed tomography (***Karthik et al., 2015)*** and interventional radiology***(Venkateswaralu et al., 2016, Safa et al., 2016*****).**

Research Projects

1. 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, Ongoing*).***

2. 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*).***

3. 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)**

4. Standardization and establishment of □-H2AX assay for triage biodosimetry (Duration 2 years from February 2013, 24.9 lakhs) (**Funded from LSRB, DRDO, Govt. of India, Completed)**

5. 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)**

6. Cytogenetics of idiopathic mental retardation. (Duration 3 years from January 2010, 20.9 lakhs), (**Funded from ICMR, India, *Completed asCo-investigator)***

7. 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)***

8. 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)***

9. 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)***

Research Guidance:

1. Biological effects of low dose ionising radiations **(Ph.D 245-FT/VII/2011)** ***Completed.***
2. Comparison on the biological effects of high and low Linear Energy Transfer radiations and to calculate Relative Biological Effectiveness **(Ph.D (RR)/ 382-F.T./VII/2014)**
3. Studies on molecular biomarkers and its persistence of exposures to low dose ionizing radiation**(Ph.D. (RR)/445-FT/VII/2015/COE/2015)**

List of publications

Journal publications

1. Karthik K, Vasumathy R, Pandey B, Venkatachalam P. 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):1-32.** DOI: 10.1080/09553002.2019.1665208.
2. 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): 1-42. DOI10.1080/09553002.2019.1589018
3. 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**
4. VenkateswarluRaavi, J. Surendran,K. Karthik, Solomon F. D. Paul, K. Thayalan, J. Arunakaran and **P. Venkatachalam** (2018), 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 Biophysic**s (DOI 10.1007/s00411-018-0767-0)
5. Sribala Viswanathan, Venkateswarlu Raavi, Karthik Kanagaraj, Shanmugapriya Dhanasekaran,Vinod Kumar Panicker, R. Krishnamoorthy and **Venkatachalam P** (2018) Does proliferation capacity of lymphocytes depend on human blood types? **Journal of Cellular Biochemistry. 2018 (DOI:** 10.1002/jcb.27858)
6. Mohanapriya Chinambedu Dhandapani, Vettriselvi Venkatesan, Nammalwar Bollam Rengaswamy, Kalpana Gowrishankar, Sudha Ekambaram, Prabha Sengutavan **Venkatachalam P** (2018) Novel variations inNPHS1gene in children of South Indian population and its association with primary nephrotic syndrome, **J Cell Biochem. 2018;1-8.**

7. Bhavani M, K. Thyalan, Srinivasan and **Venkatachalam P**. (2018) A comparison of estimates of doses to radiotherapy patients obtained with the dicentric chromosome analysis and the γ-H2AX assay: Relevance to radiation triage. ***Applied Radiation and Isotopes., 131:1-7.***
8. Karthik Kanagaraj, Venkateswarlu Raavi, V Shangamithra, TamizhSelvan G Venkatachalam. P (2017), Technical Note on Cytokinesis Arrested Binucleated Cell and Micronucleus Assay. **J. Rad. & Can. Res., 8: 180-185.**
9. Subashree, M, Venkateswarlu Raavi, Karthik Kanagaraj, **Venkatachalam. P** (2017), DNA damage and the bystander response in tumor and normal cells exposed to X-rays. **Mutat. Res., 821:20-27.**
10. R. Selvi, Sattar Mohammed Sarnam, S. Kayalvizhi, **P.Venkatachalam**, A. Rekha, R. Selvaraj, Shanthi Vijayaraghavan, Altered regulation of Ure A and β-catenin gene expression levels in Helicobacter pylori-associated chronic gastritis, **Indian Journal of Applied Microbiology, 20- 74-83.**
11. Safa Abdul Syed Basheerudeen, KarthikKanagaraj, M.T. Jose, Annalakshmi Ozhimuthu, S. Paneerselvam, Sudha Pattan, Santhosh Joseph, Venkateswarlu Raavi, **Venkatachalam. P,** (2017) 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. **Mutat. Res., 818:1-6.**
12. **Venkatachalam P**, M Chinnadurai, Venkateswarlu Raavi, Karthik Kanagaraj, V Shangamithra, Solomon F D Paul, (2017) Perspectives on the Role of Bystander Effect and Genomic Instability on Therapy induced Secondary Malignancy. **J. Rad. & Can. Res., 8: 53-60.**
13. Mohanapriya Chinambedu Dhandapani, Vettriselvi Venkatesan, Nammalwar Bollam Rengaswamy, Kalpana Gowrishankar, Sudha Ekambaram, Prabha Sengutavan **Venkatachalam P** (2017).Report of novel genetic variation in NPHS2 gene associated with idiopathic nephrotic syndrome in South Indian children. **Clinical and Experimental Nephrology, 21-127-133.**
14. Swapnaja Gulawani, Venkateswarlu Raavi, S. Suresh, P. **Venkatachalam** (2016). Pattern of chromosome aberrations and expression profile of p53ser15 and BAX protein in healthy subjects and cancer patients**, J. Rad. & Can. Res., 7:42-49.**
15. Safa Abdul Syed Basheerudeen, Sakina Murtaza, Venkateswarlu Raavi, M Bhavani, Joseph Santhosh, T. R. Muralidharan, **P. Venkatachalam (2016)** Assessment of early and late DNA damages in interventional radiologists exposed to protracted low dose and dose rate of X-radiation
16. VenkateswarluRaavi, Safa Abdul Syed Basheerudeen, Vijayalakshmi, Chaudhury N. K and **Venkatachalam. P (2016)** Frequency of gamma H2AX foci in healthy volunteers and health workers occupationally exposed to X-irradiation and its relevance in biological dosimetry**.** ***Rad. Environment. Biophy55:339-347***.

17. Shruthi Mohan, SheelaNampoothiri, DhanyaYesodharan,TeenaKoshy, Vettriselvi, V, Solomon FD Paul**, P. Vekatachalam (2016**), Genomic imbalances in subjects with idiopathic intellectual disability detected by multiplex ligation-dependent probe amplification. **Journal of Genetics*(95:1-11).***

18. Mohanapriya Chinambedu Dhandapani· Vettriselvi Venkatesan Nammalwar Bollam Rengaswamy Kalpana Gowrishankar Sudha Ekambaram· Prabha Sengutavan **Venkatachalam P** (2016).Report of novel genetic variation in NPHS2 gene associated with idiopathic nephrotic syndrome in South Indian children. **Clinical and Experimental Nephrology DOI 10.1007/s10157-016-1237-0)**

19. TeenaKoshy, Vettriselvi Venkatesan Kalpana Gowrishankar **Venkatachalam P,**Shruthi Mohan · Solomon Franklin Durairaj Paul (2016) Mutation Analysis of TBX1 in Children with Conotruncal Heart Anomalies. **The Indian Journal of Pediatrics (*PMID:26634261)***

20. Shruthi Mohan, Sheela Nampoothiri, Dhanya Yesodharan,Teena Koshy, Vettriselvi, V, Solomon FD Paul, **P. Vekatachalam (2016)**, Reciprocal Microduplication of the Williams-Beuren Syndrome Chromosome Region in a 9-Year-Old Omani Boy. **Lab Medicine, 47 (2):171-175.**

21. Mohanapriya Chinambedu Dhandapani, Vettriselvi Venkatesan, Nammalwar Bollam Rengaswamy, Kalpana Gowrishankar, Prahlad Nageswaran, and **Venkatachalam, P (2015).** Association of ACE and MDR1 Gene Polymorphisms with Steroid Resistance in Children with Idiopathic Nephrotic Syndrome, **Genetic Testing and Molecular Biomarkers,19(8):454-6.**

22. Teena Koshy, Venkateswaran N, Solomon F.D Paul, and **Venkatachalam. P.(2015)** Cytogenetics from paediatric oncology perspective, Sri Ramachandra Paediatric Oncology, Edte. Julius Scott, First Edition, Page:285-293.

23. **Venkatachalam. P**, TamizhSelvan G, Venkateswarlu Raavi, Safa Abdul Syed Basheerudeen, Karthik Kanagaraj, Amit Roy Choudhuary and, Solomon F.D Paul (2015) Radiation signature on exposed cells: relevance in doe estimation**. World J. of Radiology , 7(9): 266-278.**

24. Venkateswarlu Raavi, TamizhSelvan G, Bhavani M, Arun Kumar, AmitAlok, Karthik. K, Namita Kalra, Vijayalakshmi, Solomon F.D Paul, Chaudhury N. K and **Venkatachalam.P** Mean frequency and relative fluorescence intensity measurement of-H2AX foci dose response in PBL exposed to irradiation an inter and intra laboratory comparison and its relevance for radiation triage Cytometry -Part-A 85A:1138-1146.

25. K.Karthik, SafaAbdual Syed Basheeruden, G. TamizhSelvan, M.T. Jose, O. AnnalakshmiOzhimuthu, S. PanneerSelvam, SudhaPattan and **P.Venkatachalam (2015)** Assessment of dose and DNA damages in individuals exposed to low dose and low dose rate ionizing radiations during computed tomography imaging***. Mutat. Res., 789-790,1-6.***

26. Shruthi Mohan, Teena Koshy, **Perumal Vekatachalam**, Sheela Nampoothiri, Dhanya Yesodharan, Kalpana Gowrishankar, Jeevan Kumar, Latha Ravichandran, Santhosh Joseph, Anupama Chandrasekaran, Solomon FD Paul, Subtelomeric rearrangements in Indian children with idiopathic intellectual disability/developmental delay: frequency estimation and clinical correlation using FISH**. Indian Journal of Medical Research .**

27. Teena Koshy, Vettriselvi Venkatesan, **P. Venkatachalam**, Sridevi Hegde, Solomon Franklin Durairaj Paul (2015) The A1298C MethylenetetrahydrofolateReductase Gene Variant as a Susceptibility Gene for Non-Syndromic Conotruncal Heart Defects in an Indian Population. ***Paediatric Cardiology, 36 (5): DOI10.1007/s00246-015-1188-3***

28. D. Bakkiam, M.Bhavani, A. ArulAnanthaKumar, SwethaSonwani, **P.Venkatachalam**, K.Sivasubramanian, B.Venkatraman (2015) Dicentric assay: Inter-laboratory comparison in Indian laboratories for routine and triage applications. ***Applied Radiation and Isotopes 99:77-85.***

29. TamizhSelvan G, Chaudhury, N.K and **Venkatachalam P**. (2015) Comparison of results of the manual and automated scoring of micronucleus frequencies in 60 Co-irradiated peripheral blood lymphocytes for triage dosimetry. ***Applied Radiation and Isotopes 97:70-77.***

30. Bhavani M, Tamizh Selvan G, Vijayalakshmi J, Harpreet Kaur, J.S.Adihari, Chaudhury,N.K and **Venkatachalam P**. (2014) Dicentric chromosome aberration analysis using Giemsa and centromere specific fluorescence in-situ hybridization for biological dosimetry: An inter- and intra-laboratory comparison in Indian laboratories. ***Applied Radiation and Isotopes 94:85-90.***

31. TamizhSelvan G, Bhavani M, Vijayalakshmi J, Solomon F.D. Paul, Chaudhury, N.K and **Venkatachalam P**. (2014) Delayed mitogenic stimulation decreases DNA damage assessed by micronucleus assay in human peripheral blood lymphocytes after 60co irradiation. ***Dose response 12;498-508.***

32. Himavanth Reddy, K, Solomon Paul, N. Sanjeeva Reddy and **Venkatachalam, P** (2014), Androgen receptor gene tagging single nucleotide polymorphisms are not associated with PCOS in South Indian Women. **Journal of Pharmacy and biological Sciences 9(4):7- 11.**

33. Himavanth Reddy, K, Solomon Paul, N. Sanjeeva Reddy and **Venkatachalam, P (2013),** Study on follicle stimulating hormone receptor gene polymorphisms in south indian women with polycystic ovarian syndrome**. American Medical Journal, 4:160-167.**

34. Safa Abdul Syed Basheerudeen, Chinnadurai Mani, Megha Anil Kumar Kulkarni, KarthikaPillai,

AnilaRajan and **Venkatachalam, P (2013),** Human brain glioblastoma cells do not induce but respond to bleomycin induced bystander response from lung adenocarcinoma cells. **Mutat. Res.,754:114-119.**

35. Chinnadurai, M, Solomon Paul and **Venkatachalam, P** (2013). The effect of growth architecture on the induction and decay of bleomycin and X-ray induced bystander response and genomic instability in lung adenocarcinoma cells and blood lymphocytes, **Int. J. Radiat. Biol., 89(2):69-78.**

36. Chinnadurai, M, Bhavana.S. Rao, R.Deepika, Solomon Paul and **Venkatachalam, P** (2012) Role of reactive oxygen species and nitric oxide in mediating chemotherapeutic drug induced bystander effects in human cancer cells exposed in-vitro, **World. J. Oncol. 3(2):64-72.**

37. Chinnadurai, M, `Shravanthi C, Venkateswaran G, Solomon Paul and **Venkatachalam, P** (2011) Bleomycin, neocarcinostatin and ionizing radiation induced bystander effects in the cells of normal diploid human lung fibroblasts, bone marrow mesenchymal stem cells, lung adenocarcinoma cells and peripheral blood lymphocytes, **Int. J. Radiat. Biol.,** ***87;673-682.***.

38. Priyadarshini, R, M. Chinndurai, K. Gandhervin, I. Raheman, Solomon F.D. Paul, and **P. Venkatachalam**(2011), Quantification of DNA double strand breaks in blood lymphocytes and lung fibroblasts cells (WI-38) after in-vitro exposure to bleomycin. **Ind. J. Radiat. Res.,** ***3-4:63-67.***

39. **Venkatachalam P**, Solomon F.D. Paul, Harpreet Kaur and R.K. Jeevanram(2011), Standardization and validation of cytogenetics markers to quantify radiation absorbed dose . **Defence Science Journal, 61(2):125-132**.

40. M. Chinnadurai, K. Gandhervin, R. Priyadarshini, Solomon Paul and **Venkatachalam, P** (2010) Bleomycin induced bystander response in human normal lung fibroblasts (WI38) and adenocarcinoma cells (NCI-H23), **Sri Ramachandra Journal of Medicine.** ***3(1): 3- 8.***

41. Vijayalakshmi, J TeenaKoshy, Harpreet Kaur, F. Andrea Mary, R. Selvi, V. DeepaParvathi, R. Bhavani, R. VikramJayanth, **P. Venkatchalam**and Solomon F. D. Paul (2010) Cytogenetic analysis of patients with primryAmmenorrehea, **Int. J. Human. Genet., 10 (1-3) ;71-76.**

42. Apoorva Reddy, Amrita Rebekha, Priyanka Modi, Raveendran Ramya, Santhosh Joseph, Solomon Paul and **Venkatachalam, P** (2010), Radiation induced DNA damages in patients exposed to X-rays during cerebral angiography. **Int. J. Low Radiation, 7 (1) : 10-19.**

43. **Venkatachalam, P,** Solomon Paul and Vikram Jyanath (2009), Modification of 2-deoxy- D-glucose on radiation and chemotherapeutic drug-induced chromosomal aberrations. **J. Can. Res. and Ther., 5,S47-S51.**

44. Damania Preethi, Harpreet Kaur, Solomon F.D. Paul, Thayalan K., Balu David M.and **P. Venkatachalam (2009**), Effect of dose rate and energy on the yield of chromosomal aberrations in peripheral blood lymphocytes exposed low LET ionizing radiation. **Brachytherapy News, 1: 13-17.**

45. **Venkatachalam, P,** I. Rahiman, Chinnadurai, M and Solomon Paul (2008), Quantification of DNA double strand breaks and their repair kinetics induced by Bleomycin. **Ind. J. Radiat. Res., 5,3-4.**

46. Chinnadurai, M, Andrea Mary, M, Solomon Paul and **P. Venkatachalam (2008),** Adaptive response

of human lymphocytes exposed to ionizing radiation and bleomycin. **Ind. J. Radiat. Res., 5,3-4.**

47. Venkateswaran N, T. Koshy, Solomon Paul and **P. Venkatachalam (**2008) Isochromosome of the long arm of chromosome-17 as a sole abnormality in myelodysplastic syndrome: a case finding, **Ind. J. Radiat. Res., 5,3-4.**
48. Solomon F.D. Paul, H. Kaur and Venkatachalam, P. Radiation dosimtery preparedness: ARA-C and its importance in improving the qualities of MN assay. **Ind. J. Radiat. Res., 5, 3-4.**
49. Vettriselvi V, Vijayalakshmi. K, Solomon F.D. Paul, **Venkatachalam P** (2008) ACE and MTHFR gene polymorphism in unexplained recurrent pregnancy loss. **J. Obes. Gyencol. Res., 34:304-306.**
50. **Venkatachalam P**, de Toledo S.M, Pandey, B.N, Tephly, L.A. Carter, A.B, Little, J.B, Spitz DR and El Azzam (2008). Regulation of normal cell cycle progression by flavin containing oxidases. **Oncogene, 27:20-31**
51. **Venkatachalam P**, Vikram R. Jayanth, and Solomon F.D. Paul (2007). Modifications of bleomycin induced cytogenetic Damages by 2-Deoxy-D-glucose on Normal and Tumor cells. **Int. J. of Human Genetics, 7: 307-314**
52. Vettriselvi V, Vijayalakshmi. K, Solomon F.D. Paul., **Venkatachalam P** (2007) XRCC1 and XPD gene polymorphisms in a south Indian population. **Asian. Pacific. J. Cancer. Prev.,8:283-286**
53. Harpreet Kaur, Solomon F.D. Paul, VR, Jayanth, Thayalan, K. Balu David and **P. Venkatachalam**(2007) In vitro dicentric and micronucleus dose response curves for C0- 60 gamma radiation for biodosimetry**. Indian J. Radiat. Res., 4:10-18.**
54. Azzam, EI, de Toledo SM, Pandey, BN and **Venkatachalam, P** (2007) Mechanisms underlying the expression and propagation of low dose/low fluence ionising radiation effects. **Int. J. Low Radiation, 4 : 61-68.**
55. Kaur H., Teena K, Venkateswaran N., **Venkatahalam P**. and Solomon F.D. Paul (2007) Chromosome painting and its versatility in modern diagnostics. **Sri Ramachandra Journal of Medicine 1:20-26.**
56. de Toledo SM, Asaad N, **Venkatachalam P**, Li L, Howell RW, Spitz DR and El Azzam (2006) Adaptive responses to low-dose/low-dose-rate gamma rays in normal human fibroblasts: the role of growth architecture and oxidative metabolism. **Radiat. Res., 166: 849-857.**
57. **Venkatachalam P**., Solomon F.D. Paul, and Azzam EI (2006) Bystander response; A non-DNA targeted effects of alpha particle irradiation. **Sri Ramachandra Journal of Medicine, 1 :9-14**
58. **Venkatachalam P**., V.R. Jayanth, Solomon F.D. Paul, and Vettriselvi V (2006) Protective effect of 2-deoxy-glucose on chemotherapeutic drug induced DNA damages on peripheral blood lymphocytes exposed in-vitro. **Int. J Hum. Genet., 6:133-138**.
59. Vettriselvi V, Vijayalakshmi K, Solomon F.D. Paul and **Venkatachalam P**. (2006) Genetic Variation of *GSTM1, GSTT1* and *GSTP1* Genes in a South Indian Population. **Asian. Pacific. J.**

Cancer. Prev., 7:325-328.

60. Pandey, B.N**, Venkatachalam P**, Sonia M. de Toledo and Edouard I. Azzam (2005). Ionising radiation induced bystander effect: mechanism and relevance to radiation protection and radiotherapy. **Ind. J. Rad. Res., 2:13-29.**

61. **Venkatachalam P**, SM. de Toledo and EdouardI. Azzam (2005). Flavin containing oxidases regulate progression from G1 to S-phase of cell cycle in normal human diploid fibroblasts. **Radiation Physics & Chemistry, 72: 315-321.**

62. Prasad V.S.V. Neti, SM. de Toledo, **Venkatachalam P**, Edouard I. Azzam and Roger W. Howell (2004). A multi-port low-fluence alpha-particle irradiator: Fabrication, testing and benchmark radiobiological studies. **Radiat. Res., 161: 732-738**.

63. Prabhu B.K., Gowri B, Muthuvelu K, **Venkatachalam P,** Solomon F.D. Paul**,** and V.R. Jayanth (2004). Effect of 2-deoxy-D-glucose on the induction of chromosomal aberrations in lymphocytes exposed in-vitro to gamma radiation at a dose rate of 1.0 Gy/minute. **Int J Hum Genet, 4:45-49**.

64. Prabhu B.K., **Venkatachalam P,** Solomon F.D. Paul**,** Mary N. Mohan Kumar and R.K. Jeevanram (2003). Comparison of inters and intra chromosomal aberrations in blood samples exposed to different doses of gamma radiation. **Radiat. Protect. Dosim., 103 : 103-109.**

65. **Venkatachalam P**, Solomon F.D. Paul**,** Mary N. Mohan Kumar, B.K. Prabhu, N. Gajendiran and R.K. Jeevanram (2001) Comparison of chronic exposures received by radiation workers using different biological end-points with the doses recorded by TLD. **Australasian Radiology 45:464-471.**

66. **Venkatachalam P**., Solomon F.D. Paul**,** Mary N. Mohan Kumar, B.K. Prabhu, N. Gajendiran and R.K. Jeevanram (2000) Dose-response curve for translocation frequency with single painted chromosome. A comparison with dicentric and micronuclei frequency. **Radiat. Protect. Dosim., 87:101-108.**

67. Mary N. Mohan Kumar, **P. Venkatachalam**, B.K. Prabhu, and R.K. Jeevanram (2000) Comparison of UV- induced unscheduled DNA synthesis in lymphocytes exposed to low doses of ionising radiation in vivo and in vitro. **Mutat. Res., 447:199-207.**

68. **Venkatachalam P**, Solomon F.D. Paul**,**Mary N. Mohan Kumar, B.K. Prabhu, N. Gajendiran and R.K. Jeevanram (1999) Higher frequency of dicentrics and micronuclei in peripheral blood lymphocytes of cancer patients. **Mutat. Res., 425:1-8.**

69. **Venkatachalam P,** Solomon F.D. Paul**,** Mary N. Mohan Kumar, B.K. Prabhu, N. Gajendiran and R.K. Jeevanram (1999) Estimation of dose in cancer patients undergoing fractionated radiotherapy using translocation, dicentric and micronuclei frequency. **Mutat. Res., 429:1-12.**

70. Mary N. Mohankumar, Solomon F.D. Paul, **Venkatachalam, P** and R.K. Jeevanram (1998), Influence of in vitro low-level gamma-radiation on the UV induced DNA repair capacity of human lymphocytes- analysed by unscheduled DNA synthesis and comet assay. **Radiat. Environ. Biophys 37:267-275.**

71. Solomon F.D. Paul, **Venkatachalam P** and R.K. Jeevanram (1997), A Comparative study of synchronised and conventional culture method on micronuclei dose-response curve. **Mutat. Res., 391: (1-2)91-98.**

72. Solomon F.D. Paul, **Venkatachalam P** and R.K. Jeevanram (1997), Analysis of dose- response

curve obtained with cytokinesis block micronuclei assay. **Nuclear Medicine in Biology 24:413-416.**

73. **Venkatachalam P**, Solomon F.D. Paul and R.K. Jeevanram (1996), Fluorescence *in situ* hybridisation - A Review with reference to biological dosimetry. **IGC-Report, IGC- 174, pp.1-55.**
74. Solomon F.D. Paul, **Venkatachalam P** and R.K. Jeevanram (1996), Biological indicators for radiation absorbed dose - A Review. **IGC- Report, IGC-172, pp.1-30.**

75. Solomon F.D. Paul, **Venkatachalam P** and R.K. Jeevanram (1996), Chromosomal aberration analysis for biological dosimetry - A Review. **IGC- Report, IGC-173, pp. 1- 52.**

Symposium/ Conference presentations

1. **Karthik K**, B.N.Pandey,Vasumathy R, PerumalVenkatachalam. Comparison on the biological effects of High and Low LET radiation and to calculate its RBE. **ASTRO 61st Annual Meeting., 15th -18th September 2019, Chicago, USA.**
2. **P. Venkatachalam,** K. Karthik, V.Shangamithra, Venkateswarlu R, and Safa, ASB**,** Biomarkers of low dose x-radiation received during medical imaging**ICRB-2018- Advances in Radiation Biology- Radiation Therapy & Radiation Countermeasures,** NITTE University, 4-6th November 2018, Mangalore, India**.**
3. Sangamithra, V, Santhosh Joseph, Vinay Hedge, SaiKanthSonalKadam and Venkatachalam, P. Expression pattern of γ-H2AX and p35ser15 and dose estimation in patients undergoing interventional radiological imaging. **Radiation Research Society Meeting,** Chigaco, USA, Feb 1-4, 2018.
4. **P. Venkatachalam,** Interactions of radiation with cell, National symposium on Brachytherapy, 6th May 2018, KamchaiMemeorial Hospital, Chennai IC & SR Facility Auditorium, IIT, Chennai-20
5. **P. Venkatachalam**, Enhanced biomarkers of low dose radiation exposure: will they increase risk for stochastic effects? **International Conference on Radiation Research: Impact on Human Health and Environment (ICRR-HHE-2018)**' and Second Biennial Meeting of SRR, School of Life Sciences, Hyderabad University, Hydrabad, Feb 1-4, 2018.
6. Karthi K, Venkateswaralu R, Vasumathy P, Pandey BN and Venkatachalam, P Chromosome aberration and RBE in the blood lymphocytes exposed to low and high LET radiations **International Conference on Radiation Research: Impact on Human Health and Environment (ICRR-HHE-2018)**' and Second Biennial Meeting of SRR, School of Life Sciences, Hyderabad University, Hydrabad, Feb 1-4, 2018.
7. Shangamithra, V, Santhosh Joseph, Vinay Hedge, SaiKanthSonalKadam and Venkatachalam, P. Expression pattern of γ-H2AX and p35ser15 and dose estimation in patients undergoing interventional radiological imaging **International Conference on Radiation Research: Impact on Human Health and Environment (ICRR-HHE-2018)**' and Second Biennial Meeting of SRR, School of Life Sciences, Hyderabad University, Hydrabad, Feb 1-4, 2018.
8. Venkateswaralu R, Surendran, P, Paul, SFD and Venkatachalam, P. Establishment and validation of γ-H2AX foci assay in human PBL for radiation triage and dose estimation.**International Conference on Radiation Research: Impact on Human Health and Environment (ICRR-HHE-2018)**' and Second Biennial Meeting of SRR, School of Life Sciences, Hyderabad University, Hydrabad, Feb 1-4, 2018.

9. E. Gregoire, E. Ainsbury, C. Badie, L. Barrios, JF Barquinero, C. Beinke, P. Beukes, K. Brzoska, J. Depuydt, I. Dominguez, P.N. Duy, S. Filippi, T. Gnana Sekaran[1], I. Guclu, K. Guogyte, V. Hadjidekova, S. Jang, **K. Karthik**, U. Kulka, B. Kutzner, K. Lumniczky, A. Montoro, R. Meschini, M. Milic, O. Monteiro Gil, J. Moquet, J. Martinez, M. Moreno, U. Oestreicher, J. Pajic, C. Patrono, MJ. PrietoM. Ricoul, L. Roy, L. Sabatier, N. Sebastia, S. Sommer, G. Terzoudi, A. Testa, A. Vral, D. Zafiropopoulos, M. Valente, P. **Venkatachalam**, R. Wilkins, A. Wojcik.Results of a global inter-laboratory comparison on the cytogenetic and genomic assays in the frame of the European Network of Biodosimetry Annual Conference on RENEB, 7th October 2017, France.

10. **P. Venkatachalam,** Overview on cytogenetics markers of radiation exposure**,** CNPonBiodosimtery: Preparedness for radiation emergency for Defence personnel, Institute of Nuclear Medicine and Allied Sciences, Delhi-54. 8th May, 2017.
11. **P. Venkatachalam,** Dose estimation with dicentric chromosomes: Steps and in-vivo evidences**,** CNPonBiodosimtery: Preparedness for radiation emergency for Defence personnel, Institute of Nuclear Medicine and Allied Sciences, Delhi-54. 8th May, 2017.
12. **P. Venkatachalam**, Chromosome aberration and dose estimation: troubleshoots and means to overcome. Workshop on biodosimetry, K.S. Hegde Medical Academy, Nitte University, Mangaluru, 5th May, 2017.
13. **P. Venkatachalam**Markers of DNA damage: Analysis and troubleshoots, Dept of Biochemistry,Annamali University, 2nd February, 2017.