

C. Rajesh, PhD.

Contact Info:

**Associate Professor and Head,
Department of Biotechnology,
Sri Guru Granth Sahib World University (SGGSWU),
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EDUCATION

- **PhD in Biochemistry.** Department of Biochemistry, University of Delhi South Campus, New Delhi; Thesis title: *Phage-display based cloning and characterization of recombinant antibody fragments.*
- **MSc in Biotechnology.** Department of Biotechnology; Panjab University, Chandigarh, India; Thesis title: *Isolation and characterization of hyperactive alkalophilic pectinases.*
- **Post Graduate Diploma in Bio-chemical Technology;** Sri Venkateswara College; University of Delhi, New Delhi, India.
- **BSc (Honors) in Zoology.** Sri Venkateswara College, University of Delhi, New Delhi; India.

WORK EXPERIENCE

- **December 2013 – To date: Associate Professor & Head;** Department of Biotechnology, Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India - 140406
- **February 2011 – November 2013: Senior Scientist & Head R&D;** SciGenom labs pvt. Ltd & MedGenome labs (A division of SciGenom); Plot 43A, SDF, CSEZ, Kakkanad, Kochi, Kerala, India - 682037
- **August 2006 – January 2011; Post-doctoral Research fellow;** Mammalian molecular genetics lab, SC College of Pharmacy, University of South Carolina, 715 Sumter street, Columbia, SC-29208, USA.
- **January 2004 – July 2006: Postdoctoral Research Fellow.** Mammalian molecular genetics lab, Department of Physiology, Medical University of Ohio, Toledo, Ohio-43614, USA.
- **November 2000 – December 2003: Senior Research Fellow (CSIR).** Department of Biochemistry, University of Delhi South Campus, New Delhi, India.

- **November 1998 – October 2000: Junior Research Fellow** (CSIR). Department of Biochemistry, University of Delhi South Campus, New Delhi, India.

PUBLICATIONS

1. Singh, M., Kaur, P., Kumari, S., Rajesh P., Pittman, D.L. and **Rajesh, C. (2016)**; *Investigating the Role of RNA-Processing-Related and Mismatch Repair Proteins in Homologous Recombination Repair*. Book chapter in book titled “Recent Advances in Emerging Technologies”; Publisher: Sri Guru Granth Sahib World University; Page. 121-133.
2. Kaur, H., and **Rajesh, C. (2016)**; *Identification of Conserved Domains of Proteins Involved in Homologous Recombination Repair*. Book chapter in book titled “Recent Advances in Emerging Technologies”; Publisher: Sri Guru Granth Sahib World University; Page. 69-81.
3. Singh M., and **Rajesh, C. (2015)**; *Molecular Insights into Depression in the Genomic Era.*” Book chapter in ebook titled “Depression: a silent culprit in health and disease”; Publisher: Bentham Science Publishers; Page. 69-81.
4. Mahadevan L., Ancy Yesudas, Sajesh PK, Revu S, Prasanna Kumar, Devi Santhosh, Sam Santhosh, Sasikumar JM, Gopalakrishnan VK, Jojoy Boben and **Rajesh, C. (2014)**, *Prevalence of genetic variants associated with Cardiovascular Disease Risk and Drug Response in the Southern Indian Population of Kerala*. Indian J Hum Genet; 20: 175-84.
5. Gupta, R., Ratan, A, **Rajesh, C.**, Chen, R, Kim, HL., Rocco, Miller, W., Santhosh, S., Davuluri, RV., Butte, AJ., Schuster, SC., Seshagiri, S. and Thomas, G. **(2012)**; *Sequencing and analysis of a south Asian-Indian personal genome*; BMC Genomics, 13 (1), 440.
6. **Rajesh, C.**, Baker, D.K., Pierce, A.J. and Pittman D.L. **(2011)**; *The Splicing-Factor Related Protein SFPQ/PSF Interacts with RAD51D and is Necessary for Homology-directed Repair and Sister Chromatid Cohesion.*; Nucleic Acid Research, 39 (1), 132-145.
7. Rajesh, P., **Rajesh, C.**, Wyatt, M. and Pittman, D.L. **(2010)**; *RAD51D protects against MLH1-dependent cytotoxic responses to O⁶-methylguanine*; DNA Repair, 9 (4), 458-467.
8. **Rajesh, C.**, Gruver, A.M., Basrur, V. and Pittman, D. L. **(2009)**; *The Interaction Profile of Homologous Recombination Repair Proteins RAD51C, RAD51D and XRCC2 as Determined by Proteomic Analysis*; Proteomics, 9 (16), 4071-4086.
9. Gruver, A., Yard, B., McInnes, C., **Rajesh, C.** and Pittman, D. L. **(2009)**; *Functional Characterization and Identification of Mouse RAD51D Splice Variants*; BMC-Molecular Biology, 10 (1), 27.
10. Nadkarni, A., Furda, A., **Rajesh, C.**, McInnes, C., Ruch, R. J. and Pittman, D. L. **(2009)**; *Functional characterization of the RAD51D E233G genetic variant*; Pharmacogenetics and Genomics, 19 (2); 153-160.

11. Chakraborty, J., Okonta, H., Bagalb, H., Lee, S. J., Fink, B., **Rajesh, C.** and Duggan, J. (2008); *Retroviral gene insertion in breast milk mediated lymphomagenesis*; Virology; 377; 100-109.
12. **Rajesh C** and Pittman, D.L. (2006); *Cell cycle regulation in mammalian germ cells*; Results Probl Cell Differ; 42; 343-367. (Book Chapter).
13. Gruver, A.M., Miller, K.A., **Rajesh, C.**, Smiraldo, P.G., Kaliyaperumal, S., Balder, R., Stiles, K.M., Albala, J.S. and Pittman, D.L. (2005); *The ATPase motif in Rad51D is required for resistance to DNA interstrand crosslinking agents and interaction with Rad51C*; Mutagenesis; 20 (6); 433-440.
14. Naz, R.K. and **Rajesh C.** (2005); *Gene knockouts that cause female infertility: search for novel contraceptive targets*; Frontiers in Biosciences; 10; 2447-2459.
15. Naz R.K. and **Rajesh C.** (2004); *Passive immunization for immunocontraception: Lessons learned from infectious diseases*; Frontiers in Bioscience; 9; 2457-2465.
16. Naz, R.K., Zhu, X. and **Rajesh C.** (2004); *Cloning and sequencing of a cDNA encoding for a protein specifically expressed in human testis, ovary and placenta*; Frontiers in Bioscience; 9; 2020-2028.

PROFESSIONAL COURSES/TRAINING

- **2012 – Trained in running and operation of Illumina’s Next Generation Sequencing platform, MiSeq**
- **2005 – 14th annual short course on experimental genetics of the laboratory mouse in cancer genetics research**; Organized by The Jackson Laboratory; Bar Harbor; Maine, USA.
- **1996 – Diploma in Computer concepts and application**; International School of Computer Technology, New Delhi, India.

INVITED PRESENTATIONS, POSTERS AND CONFERENCES

- Organizing secretary at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Selected Talk, Kaur H, Kaur, H., and **Rajesh, C.** (2016); *In Silico Identification of Target Regions of RAD51 protein for Peptide Based Cancer Therapy.* at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Singh, M., Kaur, S., Pittman, D.L. and **Rajesh, C.** (2016); *Investigating the Role of NONO in Homologous Recombination-related Break Repair.* at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th**

February 2016.

- Kaur, P., Kaler, JK., Pittman, D.L. and **Rajesh, C. (2016)**; *Investigating the role of Heterogeneous Nuclear Ribonucleoprotein L in Homologous Recombination Repair Pathway.* at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Kumari, S., Rajesh, P. and **Rajesh, C. (2016)**; *In frame primer design for cloning and expression of human MSH2 & MSH6 genes.* at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Singh, J., Kaur, J., and **Rajesh, C. (2016)**; *Sanger Sequencing-Based Tool for Identification of Clinically Relevant polymorphisms of BRCA1 and BRCA2.* at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Kaur, H., and **Rajesh, C. (2016)**; *Identification of Conserved Domains of proteins involved in Homologous Recombination DNA Repair.* at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Saini, R., Kahlon, JS., **Rajesh, C.** and Rajesh, P. (2016); **Phosphorylation of RAD51D in Response to Alkylation Base Damage.** at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Kaur, J., Singh, N., **Rajesh, C.** and Kaur, D (2016); *Investigating the role of crude extract from leaves of Withania somnifera on cytotoxicity and metastasis.* at International Conference on “Recent Advances in Emerging Technologies” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 23rd and 24th February 2016.**
- Porcher LD, **Rajesh C,** Horner RD, Turner JR, Pittman DL. “*Paraspeckle Sub-nuclear Organelle Components are Necessary for the Maintenance of Genome Integrity*” Poster to be presented at 46th Annual Meeting of Environmental Mutagenesis and Genomics Society (EMGS), at **Sheraton New Orleans Hotel, New Orleans, Louisiana, USA on September 26-30, 2015.**
- Invited Guest presentation in the special symposium on “Genomics and Proteomics” at the 101st Indian Science Congress held at **University of Jammu, Jammu, India on 3rd to 7th February 2014.**
- Organizing secretary and Presenter at National Conference on “Emerging Horizons in

Science and Technology-2014” organized by and at **Sri Guru Granth Sahib World University (SGGSWU), Fatehgarh Sahib, Punjab, India on 17th and 18th January 2014.**

- Invited Guest Presentation titled “*Unveiling RAD51 interactome: An important step towards understanding genome instability and chemoresistance*” at **Dept. of Biotechnology, Panjab University, Chandigarh, India on 18th July, 2013.**
- Presentation titled “*Concepts and tools in Molecular Biology*” at Onco-Geno-Path Workshop 2013, **on Apr. 20th, 2013 at MIMS Oncology Centre, Calicut, Kerala, India.**
- Presentation titled “*BRCA mutations in clinical samples in India - Case presentation*” at International Conference on “*The Next Revolution In Genetics And Genomics*”, **on Jan. 27th to 29th, 2013 at PGIMER Auditorium, Dr. R.M.L Hospital, New Delhi, India.**
- Presentation titled “*Cardiology-panel for detection of genetic variants related to cardiovascular diseases and drug response*” at 2nd Next-Generation Sequencing and Bioinformatics for Genomics & Healthcare meeting organized by SciGenom Labs with IIT Madras, **on Nov. 1st to 3rd, 2012 at IIT-Madras, Chennai, India.**
- Presentation titled “*Pediatric Genetic Testing (PCR and Sequencing-based)*” at the First National Applied Genetics Conference for Pediatricians **on Feb 11th and 12th 2012 at Deenanath Mangeshkar Hospital and Research Centre, Erandawane, Pune, Maharashtra, India.**
- Presentation at Bioinformatic Workshop “*Basic Molecular Biology : A refresher*” at First Next-Generation Sequencing and Bioinformatics for Genomics & Healthcare meeting, Organized by SciGenom Labs Private Ltd, Rajiv Gandhi Centre for Biotechnology (RGCB) & Center for Bioinformatics, University of Kerala, INDIA, **on Dec 16th and 17th, 2011 at RGCB, Thiruvananthapuram, Kerala, India. (Speaker and Session Chair)**
- “*The Future of Personalized Medicine & Importance of Prenatal Diagnosis*”, Organized by MedGenome labs, Kochi and People Health, Bengaluru. **An interactive session on Genetic Diagnosis, May 3 2011 at Taj Vivanta, Bengaluru, Karnataka, India. (Organiser and Meeting Chair)**
- **Rajesh, C.** Baker, D and Pittman, DL. “*The Paraspeckle Protein SFPQ is Necessary for Maintenance of Genome Stability by Homology-directed Repair and Sister Chromatid Cohesion*” Poster presented at **Hollings Cancer Center 10th Annual Hollings Cancer Center Research Retreat 2010, November 19, 2010 at Medical University of South Carolina, Charleston, SC, USA.**
- Baker, D, **Rajesh, C.** and Pittman DL. “*Investigating the Roles of Novel DNA Repair Proteins in DNA Crosslink Repair*” Poster presented at **Univ. of South Carolina Discovery day, April 23, 2010** (Baker D is an undergraduate student that I am co-mentoring)
- Johnson, C, **Rajesh, C.** and Pittman DL. “*NonO: A Candidate for Repairing DNA Damage Produced by Cancer Chemotherapeutic Drugs*” Poster won award in “Cell Biological

Sciences” section at **2009 Annual Biomedical Research Conference for Minority Students (ABRCM), November 5-7, 2009** at **Phoenix, AZ, USA**. (Johnson C is an undergraduate student that I am co-mentoring)

- Rajesh, P., Litvinchuk, A., **Rajesh, C.**, Pittman, DL and Wyatt, M. “*Protective role of RAD51D in resolving intermediates generated by mismatch repair recognition of DNA damage*” Poster presented at **2009 AACR Conference on Frontiers in Basic Cancer Research, October 8-11, 2009** at **Boston, MA, USA**.
- **Rajesh, C.** and Pittman, DL. “*The Splicing-Factor Related Protein SFPQ Interacts with RAD51 Paralogs and is Required for DNA Repair*” Poster presented at **2009 FASEB Summer Research Conference, Genetic recombination and Genome rearrangements, August 2-7, 2009** at **Snowmass village, CO, USA**.
- Rajesh, P., Litvinchuk, A., **Rajesh, C.**, Wyatt, M. and Pittman, DL. “*MMR and HR Interplay in Response to Alkylation Base Damage*” Poster presented at **2009 FASEB Summer Research Conference, Genetic recombination and Genome rearrangements, August 2-7, 2009** at **Snowmass village, CO, USA**.
- Johnson, C, **Rajesh, C.** and Pittman DL. “*NonO: A Candidate for Repairing DNA Damage Produced by Cancer Chemotherapeutic Drugs*” Poster won 2nd prize at **Univ. of South Carolina Discovery day, April 23, 2009**. (Johnson C is an undergraduate student that I am co-mentoring)
- Invited Guest Presentation titled “*Unveiling RAD51 interactome: An important step towards understanding genome instability and chemoresistance*” at **Dhirubhai Ambani Life Sciences Centre, Reliance Life Sciences Pvt. Ltd, Mumbai on 27th February, 2009**.
- **Rajesh, C.** and Pittman, DL. “*Interaction of RAD51 Paralogs with the SFPQ-NONO Complex Mediates Repair of DNA Damage by Homologous Recombination*” Poster presented at **Hollings Cancer Center 8th Annual Hollings Cancer Center Research Retreat 2008, December 5, 2008** at Medical University of South Carolina, **Charleston, SC**.
- Rajesh, P., **Rajesh, C.**, Wyatt, MD. and Pittman, DL. “*Maintaining Chromosome Stability by Cross-talk Between DNA Repair Pathways*” Poster presented at **2nd GSA Genetic Analysis: Model Organisms to Human Biology Meeting, January 5-8, 2008** at **San Diego, CA**.
- **Rajesh, C.**, Basrur, V. and Pittman, DL. “*Proteomic Analysis of RAD51 Paralog Binding Proteins*” Poster presented at **Hollings Cancer Center 7th Annual Hollings Cancer Center Research Retreat 2007, November 16, 2007** at Medical University of South Carolina, **Charleston, SC**.
- **Rajesh, C.**, Basrur, V. and Pittman, DL. “*Proteomic Analysis of RAD51 Paralog Binding Proteins*” Poster presented at **Determinants of Genome Stability and Human Disease meeting, October 13, 2007** at **University of North Carolina, Chapel Hill, NC**.

- Yard, B., Gruver, AM., **Rajesh, C.**, Nadkarni, A and Pittman, DL. “*Identification and Characterization of Mouse Rad51d Alternative Splice Variants*” Poster presented at **Determinants of Genome Stability and Human Disease meeting, October 13, 2007** at **University of North Carolina, Chapel Hill, NC.**
- **Rajesh, C.**, Wyatt, M., McInnes, C., Smith, C. and Pittman, DL. “*Sensitizing Cells to Chemotherapeutic DNA Cross-linking Agents by Disrupting RAD51D*” Poster presented at **Hollings Cancer Center Annual Spring Research Conference on Cancer Drug Discovery and Development, March 22-23, 2007** at Kiawah Island, SC.

RESEARCH INTERESTS:

- Mammalian Molecular Genetics
- Genomics
- Proteomics
- Mammalian DNA Repair
- Genome instability and Cancer
- Developmental Biology
- Molecular Diagnostics and Personalized medicine
- Homologous Recombination
- Molecular immunology