

DR. RASHMI BHARDWAJ

Name and full correspondence address:

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Academic Qualification: Ph.D., M.Sc. Biotechnology

Ph.D. thesis title, Guide's Name, Institute/Organization/University, Year of Award.

Thesis Title: "To elucidate the cytokine profile and feasibility of immortalization of human fetal liver hematopoietic stem cells". Supervisor's Name: Prof. Lalit Kumar and Prof. Vinod Kochupillai, Dept. of Medical Oncology, Institute Rotary Cancer Hospital (IRCH), All India Institute of Medical Sciences (AIIMS), Delhi, India

Work experience:

S. No.	Position held	Name of the Institute	From	To	Pay Scale
1	Junior Research Fellow, ICMR	Medical Oncology, AIIMS, Delhi	Oct. 2003	Oct 2005	8000/- + HRA
2	Senior Research Fellow, ICMR	Medical Oncology, AIIMS, Delhi	Oct. 2005	Oct 2006	10000/- + HRA
3	Research Officer, DBT	Medical Oncology, AIIMS, Delhi	Oct. 2006	Jan 2009	18000/- + HRA
4	Graduate Research assistant	Memorial Sloan Kettering Cancer Center, New York, USA	Feb, 2010	Oct 2010	\$38,000/annua l
5	Postdoctoral Research fellow	Memorial Sloan Kettering Cancer Center, New York, USA	Nov 2010	May 2012	\$47,000/annua l
6	Postdoctoral Research Fellow +Principal Investigator of Project funded by Department of Defense, USA	Memorial Sloan Kettering Cancer Center, New York, USA	Nov 2012	Nov 2013	\$49,940/annua l
7	Assistant Professor	Maharishi Dayanand University, Rohtak	Nov. 2013	Present	Pay Level 11 (from January 2018)

Professional Recognition/ Award/ Prize/ Certificate, Fellowship received

S.No.	Name of the Award	Funding Agency	Year
1	Award of National Eligibility (NET)	Council of Scientific and Industrial Research (CSIR), Govt. of India	2002
2	Graduate Aptitude Talent Examination Score 95.27 Percentile	Indian Institute of Technology, Madras, India	2003
3	Award of Junior Research Fellow	Indian Council of Medical Research	2003

	(JRF)	(ICMR),Govt.of India	
4	Travel Award from New York Society of Stem cell Foundation (NYSCF) to attend 5 th Annual Meeting at Cairns, Australia	International Society of Stem Cell Research	2007
5	Postdoctoral Fellowship Award to conduct Research on Bone marrow failure pathogenesis. (selected 1 among 3 across USA)	Department of Defense, USA	2012
6	Best Oral Presenter	International Conference on Integrative Chemistry, Biology & Translational Medicine (ICBTM), February 25-26, 2019, Delhi, India	2019

Research Areas:

I am currently working as Assistant Professor at the Centre for Medical Biotechnology at Maharshi Dayanand University, India and established Cancer and Stem cell biology lab in my department. Before joining current position, I completed my PhD from Dept. Of Medical Oncology, AIIMS, New Delhi in fetal liver hematopoietic stem cell biology and also gained experience with cancer patient's samples. I have also worked as a postdoctoral fellow at Memorial Sloan Kettering cancer Centre for nearly 4 years where I was involved in understanding of pathogenesis of bone marrow failure syndromes. I was also involved in various other cancer research projects involving molecular biology, proteomics and cancer metabolism, which gave me an expertise in modern techniques like microarray illumina, its data analysis, flow cytometry and real time PCR. Currently I am involved in cancer and stem cell biology.

Content Writer for two **modules of Indian MHRD-UGC ePathshala program** for paper titled "Animal Cell Biotechnology".

Content Reviewer for eight modules of Indian MHRD-UGC ePathshala program for paper titled "Animal Cell Biotechnology".

<https://epgp.inflibnet.ac.in/ahl.php?csrno=3>

Membership:

International Society of Stem Cell Research
The Indian Science Congress Association
National Academy of Biological Sciences
Advisory Committee, DBT sponsored Medical Biotechnology program, MDU
Ethics Committee Member, Post Graduate Institute Of Dental Sciences, Pt. BD Sharma UHSR

Biotechnology expert for Biotechnology syllabus XI-XII class for Council for the Indian School Certificate Examinations (ISCE Board).

Project Undertaken as PI:

1. The Role of Ribosomal Protein Deficiency in Pathogenesis of Bone Marrow, grant from Department of Defense (DoD), USA, 2012-2013, Sanctioned grant \$ 250000.
2. Elucidation of KIT signaling pathway alterations by membrane bound and soluble isoform variants of stem cell factor. Start-up Grant funded by University Grant Commission, New Delhi India between July 2015 - Dec 2017. Sanctioned grant - Rs. 6 lakhs
3. Non-invasive identification of early predictive lung cancer biomarkers through exosomes. ICMR Project December 2020-December 2023. Sanctioned grant - Rs. 62 lakhs
4. Secretoglobulin and Lipopolysaccharide Immunotherapy on Lung Cancer: A preclinical investigation to evaluate adequacy and assurance on Haryana population. Funding Agency: Department of Science and Technology, Haryana. Sanctioned Amount- Rs 45 lakhs.

Lecture Delivered: CET, IILM academy of Higher Learning, greater Noida, April,2017 on "Stem Cells and their applications in healthcare".

Publication.

1. Vinod Kochupillai, Lalit Kumar, Rashmi **Bhardwaj**, Sujata Mohanty, Manju Sengar. Stem Cell: Its evolving role in cancer management and research. *Annals of National Academy of Medical Sciences (India)* 42(2006) 235-243. [I.F.- 0.2]
2. Vinod Kochupillai, **Rashmi Bhardwaj**, Lalit Kumar. Fetal liver cytokines: potential therapeutic value. *Annals of National Academy of Medical Sciences (India)* 44(2008) 177-183. [I.F.- 0.2]
3. A Czechowicz, **R Bhardwaj**, W Pang, CY Park, IL Weissman. Targeted clearance of human hematopoietic stem cell niches via inhibition of SCF signaling using monoclonal antibody SR-1. *Biology of Blood and Marrow Transplantation* 17(2011) S187-S188 [I.F.- 5.74]
4. Kelly A. McGowan, Wendy W. Pang, **Rashmi Bhardwaj**, Marcelina G. Perez, John V. Pluvineau, Bertil E. Glader, Reem Malek, Susan M. Mendrysa, Irving L. Weissman, Christopher Y. Park and Gregory S. Barsh. Reduced ribosomal protein gene dosage and p53 activation in low risk myelodysplastic syndrome. *Blood*. 118(2011) 3622-3633. DOI: [10.1182/blood-2010-11-318584](https://doi.org/10.1182/blood-2010-11-318584) [I.F.- 22.11]
5. WendyW. Pang, Agnieszka Czechowicz, AaronC. Logan, **Rashmi Bhardwaj**, JessicaPoyser, Christopher Y. Park, Irving L. Weissman and Judith A. Shizuru Anti-CD117 antibodydepletesnormal and myelodysplasticsyndromehumanhematopoieticstemcells in xenografted mice. *Blood* 133(2019):2069-2078. (DOI: [10.1182/blood-2018-06-858159](https://doi.org/10.1182/blood-2018-06-858159)) [I.F.- 22.11]
6. Pooja Yadav, Ravina Vats, Afsareen Bano, **Rashmi Bhardwaj**. Hematopoietic Stem Cells Culture, Expansion and Differentiation: An Insight into Variable and Available Media. *International journal of stem cells* 2020; 13:326-334. Published online on November 30, 2020; (DOI: [10.15283/ijsc19157](https://doi.org/10.15283/ijsc19157)) [Impact Factor-2.5]
7. Pooja Yadav, Ravina Vats, Afsareen Bano, **Rashmi Bhardwaj**. Mesenchymal Stem cell immunomodulation and regeneration therapeutics as an ameliorative approach for COVID-19 pandemic. *Life Sciences*; Volume 263, 15 December 2020, 118588 (<https://doi.org/10.1016/j.lfs.2020.118588>) [Impact Factor-5.03]
8. Gitika Sharma, Mala Kamboj Anjali Narwal, **Rashmi Bharadwaj** and Pooja Yadav. Cytotoxic role of chlorogenic acid on oral squamous cell carcinoma cell Line. *Indian Journal of Otolaryngology and Head & Neck Surgery* , 2021, DOI: (<https://doi.org/10.1007/s12070-021-02395-1>) [I.F.- 0.4]
9. Sivakumar N, Narwal A, Kamboj M, Devi A, Kumar S, **Bhardwaj R**. Molecular and Immunohistochemical Cognizance of HPV16 in Oral Leukoplakia, Oral Squamous Cell Carcinoma and Oropharyngeal Squamous Cell Carcinoma. *Head and Neck Pathology*. 2021 Feb 28:1-1. (<https://doi.org/10.1007/s12105-021-01309-5>) [Impact Factor-3.06]
10. Chahal R, Nanda A, Akkol EK, Sobarzo-Sánchez E, Arya A, Kaushik D, Dutt R, **Bhardwaj R**, Rahman MH, Mittal V. *Ageratum conyzoides* L. and Its Secondary Metabolites in the Management of Different Fungal Pathogens. *Molecules*. 2021; 26(10):2933. <https://doi.org/10.3390/molecules26102933> [Impact Factor-4.41]
11. **Rashmi Bhardwaj**, Lalit Kumar, Deepika Chhabra et al. In Vitro Expansion of Fetal Liver Hematopoietic Stem Cells, *Scientific Report* 11(1) June, 2021. <https://doi.org/10.1038/s41598-021-91272-6> [Impact Factor-5.13]
12. N. Sivakumar, Anjali Narwal, Sanjay Kumar, Mala Kamboj, Anju Devi, Deepak Pandiar, **Rashmi Bhardwaj**. Application of the Bethesda system of reporting for cervical cytology to evaluate human papilloma virus induced changes in oral leukoplakia, oral squamous cell carcinoma, and oropharyngeal squamous cell carcinoma: A cytomorphological and genetic study. June 2021 *Diagnostic Cytopathology* <https://doi.org/10.1002/dc.24813> [Impact Factor-1.58]
13. Henry A. Adeola, Afsareen Bano, Ravina Vats, Amit Vashishtha, Deepika Verma, Deepak Kaushik, Vineet Mittal, Md. Habibur Rahman, Agnieszka Najda, Ghadeer M. Albadrani, Amany A. Sayed, Sameh M. Farouk, Emad H.M. Hassanein, Muhammad Furqan Akhtar, Ammara Saleem, Mohamed M. Abdel-Daim, **Rashmi Bhardwaj**, Bioactive compounds and their libraries: An insight into prospective phytotherapeutics approach for oral mucocutaneous cancers. *Biomedicine & Pharmacotherapy*, Volume 141, 2021, 111809, <https://doi.org/10.1016/j.biopha.2021.111809> [Impact Factor-6.52]
14. Pooja Yadav, Ravina Vats, Afsareen Bano, Amit Vashishtha, **Rashmi Bhardwaj**. A Phytochemical approach towards the treatment of Cervical Cancer using Polyphenols and Flavonoids. *Asian Pac J*

Cancer Prev. 2022 Jan 1;23(1):261-270. <https://doi:10.31557/APJCP.2022.23.1.261> [Impact Factor-1.77]

15. **Rashmi Bhardwaj**; Lalit Kumar; Deepika Chhabra; Sujata Mohanty; Atul Sharma; N K Mehra; Vinod Kochupillai. Effect of fetal liver condition media derived cytokines (IL-6 and Flt-3) on human bone marrow stem cells colony formation. *Cytokine*. 2022 May;153:155863. <https://doi.org/10.1016/j.cyto.2022.155863> [Impact Factor-3.86]
16. Afsareen Bano, Ravina Vats, Pooja Yadav, **Rashmi Bhardwaj**. Exosomes in Oral Cancer Diagnosis, Prognosis, and Therapeutics- An emergent and imperative non-invasive natural nanoparticle based approach. *Crit Rev Oncol Hematol*. 2022 Oct;178:103799. <https://doi.org/10.1016/j.critrevonc.2022.103799> [Impact Factor-6.62]
17. Chopra H, Verma R, Kaushik S, Parashar J, Madan K, Bano A, Bhardwaj R, Pandey P, Kumari B, Purohit D, Kumar M, Bhatia S, Rahman MH, Mittal V, Singh I, Kaushik D. Cyclodextrin-Based Arsenal for Anti-Cancer Treatments. *Crit Rev Ther Drug Carrier Syst*. 2023;40(2):1-41 <https://doi.org/10.1615/critrevtherdrugcarriersyst.2022038398> [Impact Factor-4.88]
18. Garima Sharma, Surbhi Agarwal, Kavita Verma, Rashmi Bhardwaj, Vartika Mathur. Therapeutic compounds from medicinal plant endophytes: molecular and metabolic adaptations, *Journal of Applied Microbiology*, Volume 134, Issue 4, April 2023, Ixad074, <https://doi.org/10.1093/jambio/ixad074> [Impact Factor-4.05]
19. Pooja Yadav, Ravina Vats, Afsareen Bano, Ritu Namdev, Rashmi Bhardwaj. Ameliorative potential of stem cells from human exfoliated deciduous teeth (SHED) in preclinical studies: A meta-analysis. *Regenerative Therapy*, Volume 24, 2023, Pages 117-134, <https://doi.org/10.1016/j.reth.2023.06.004> [Impact Factor-3.65]

Book Chapter

1. Bioactive Compounds as Therapeutic Intervention in Mucocutaneous Cancers. Adeniyi C. Adeola Henry A. Adeola*, Rashmi Bhardwaj, Aderonke F. Ajayi-Smith, Afsareen Bano, Tayo A. Adekiya, Michael C. Ojo, Raphael T. Aruleba. *Therapeutic Use of Plant Secondary Metabolites*, 28(111-138). Publisher: Bentham Sciences

Expertise: Stem Cells Biology, Cancer Biology, Flowcytometry, Human/Mouse genomics, Animal cell culture and biotechnology, Cytogenetics, bone marrow failure syndromes and ribosomal disorders Before joining current position, I have completed my PhD from Dept. Of Medical Oncology, AIIMS, New Delhi, and gained experience with cancer patient's samples. I also worked as a postdoctoral fellow at Memorial Sloan Kettering cancer Centre for nearly 4 years where I was involved in understanding of pathogenesis of bone marrow failure syndromes. Based on my ideas and project, which I submitted, I was awarded (1 among 3 awardees across USA) with a prestigious postdoctoral fellowship from Department of defense, USA in Feb 2012. Currently I guiding 4 Ph.D. students and Co-Guided 2 MDS thesis from PGIDS, Rohtak. Apart from these more than 20 M.Sc. Dissertation thesis has been completed under my guidance.

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