

Faculty Profile

- 1. Name : DR. MUKESH KUMAR SHARMA
- 2. Designation: Associate Professor
- 3. Department: Department of Zoology
- 4. Educational Qualification:

Level	Name of University/Board		Title/ Remark/ Medal
Post Doctorate (PDF)	Tokyo Institute of Technology, Japan	2007-08 2008-10; 2012-13; 2014	Awarded by TSF, JSPS and TBRF, Japan
Ph.D.	University of Rajasthan		Awarded
CSIR-JRF (NET)	(NET) CSIR-UGC, New Delhi		Cleared and CSIR-JRF Awarded
M.Sc. Zoology	University of Rajasthan		Passed in First Division
B.Sc. Biology	University of Rajasthan	1995	Passed in First Division

5. Experience: Teaching / Research

UG 18 PG 4 Research 21

6. Membership (Academic Bodies/ Research societies):

- Life member of Society for Free Radical Research, India/Asia.
- Japan Radiation Research Society, Japan
- International Association of Sensitization of Cancer Treatments, Japan
- Member of Young Radiation Biologists Association of Japan
- Life Member of Indian Society for Radiation Biology, India

7. Awards Received:

1.	Awarded Excellent Teacher Award by Department of Higher Education, Government of Rajasthan, Jaipur, 2018
2.	Awarded Excellent Poster Award on the basis of Reviewer Acclamation in 15 th International Congress of Radiation Research held at Kyoto, Japan from May, 25-29, 2015 and Awarded Young Investigator Travel Award to attend 15 th International Congress of Radiation Research held at Kyoto, Japan from May, 25-29, 2015.





3.	Awarded International Association for Radiation Research-Young
	Scientist Travel Award to attend 14th International Congress of Radiation
	Research, was held at Warsaw, Poland from September, 28-November 01
	2011.
4.	Awarded Travel Grant from the Department of Science & Technology,
	New Delhi to attend 14 th International Congress of Radiation Research was
	held at Warsaw, Poland.
5.	Awarded 9th International Young Scientist award for advanced study by
	IASCT, Japan, 2008.
6.	Awarded EUROTOX Young Scientist Fellowship award to attend 44th
	Congress of European Societies of Toxicology, held at Amsterdam,
	Netherlands, from October 7-10, 2007 by European Society of Toxicology.
7.	Selected for Junior Investigator Award (Travel Fellowship) to attend 5 th
	International Conference on Environmental Mutagens in Human
	Populations held at Antalya, Turkey from May 20-24, 2007.
8.	Awarded IUTOX Awards-CTDC fellowship by International Union of
	Toxicology, USA to attend the EUROTOX-2006 meetings held at Cavtat,
	Croatia from 20-24 th September, 2006.
9.	Invited as a Young Scientists delegate representing India in the Ist meeting
	of Young Radiation Scientists of Asia and also presented a poster paper in
	Ist Asian Congress of Radiation Research held at Hiroshima, Japan from
	November 15-17,2005
10.	Awarded Senior Research Fellowship from CSIR, New Delhi on the basis of
	research work performance during PhD. 2002
11.	Awarded 3 rd prize in Poster paper presentation in "National Seminar on the
	Frontiers of Research and Development in Medicinal Plants" held at CIMAP-
	CSIR, Lucknow (U.P.), INDIA from September 16-18, 2000.

8. Academic Courses Attended:

Course	Place	Sponsoring Agency	Duration
Orientation Course	Academic Staff College, University of Rajasthan, Jaipur	UGC	September, 27 to October, 23 rd 2004.



	Department of Zoology, University of Rajasthan, Jaipur	UGC	December 08-27, 2003.
Refresher	Academic Staff College, University of Rajasthan, Jaipur	UGC	February 07-26, 2011.
	Gandhian Studies Center, University of Rajasthan, Jaipur	UGC	September 05-24, 2011.
Others (Workshop/ Summer School/ Camp etc.)	UGC Sponsored Short Term Course on Creative Writing	UGC	January 05 – 10, 2015.
	International School on Radiation Research	Society for Radiaiton Research, Advanced Centre for Radiation Oncology, Dr.B Nanavati Hospital, Mumbai	September 06-20, 2020
Online F.D.P (Faculty Development Programme)	EMDI, Jaipur	Entrepreneurship & Management Development Institute, Jaipur, India	March 10-20, 2004.
	Online International Workshop on Intellectual Property Rights (Equivalent to FDP)	IQAC, DDU College, University of Delhi, New Delhi	February 09-13, 2021
	Gyan Ganga, State Level Subject Specific Short Term Online Training Program "Initiative for Teaching-Learning Excellence in Zoology	Commissionerate of College Education, Govt. of Rajasthan and Govt. Dungar College, Bikaner	January 25-31, 2021



9. Seminar/ Conference (Important conference of last 10 Years) :

Name of Symposium/ Seminar/Conference	Internat./ National/ Regional	Organized by	Title of Paper presented	Year
5 th International Conference on Bioenergy Environment and Sustainable Technologies (Best 2021) January 29-30 th , 2021	International	Arunai Engineering College, Tiruvanamalai, Tamilnadu	Phytochemical and antimicrobial activity analysis of ethanolic extract of Guggul (<i>Commiphora</i> <i>wightii</i>) gum	2021
National Conference on Climate change: The Impact on Biodiversity and Global Health Security December 20-22, 2019	National	Department of Botany, University of Rajasthan, Jaipur	Heavy metal induced oxidative stressherbal extract	2019
National Conference on Nanomaterials in Biology (NCNB 2019) held at Department of Zoology, University of Rajasthan, Jaipur	National	Department of Zoology, University of Rajasthan, Jaipur	Future prospects of metal nanoparticles (NPs) as an efficient carrier of plant based drugs to cure cancer given contributed talk.	2019
16 th International Congress of Radiation Research held at Menchester, UK from August, 25 to August 29 th , 2019.	International	International Association for Radiation Research	Phosphorylation of XRCC4 by DNA- dependent protein kinase in DNA double-strand break repair through non- homologous end joining	2019
International Conference on Recent Trends in Environment & Natural Sciences, held at Government Science College, Sikar from 12- 13 th February, 2019	International	Government Science College, Sikar	Molecular mechanism of DNA double strand break repair and its application in cancer radiotherapy; Invited talk	2019
International Conference on Frontiers at the Chemistry-Allied Sciences Interface held at Department of Chemistry, University of	International	Department of Chemistry, University of Rajasthan, Jaipur	Role of various phytoextracts in modifying arsenic induced toxicity	2018



Rajasthan, Jaipur from 21-22 nd December, 2018				
International Conference on Environmental Awareness Protection & New Challenges held at St. Wilfred's PG College, Jaipur from 03-04 th February, 2017.	International	St. Wilfred's PG College, Jaipur under the auspices of International Society for Life Sciences and The Indian Science Congress Association, Jaipur Chapter	Herbal drugs: Possible modifier against metal toxicity (Invited Talk)	2017
International conference on Fight Against Cancer (FAC Con-2017), CSJM University, Kanpur from 05- 07 th October, 2017	International	CSJM University, Kanpur (UP)	Non-homologous end- joining repair pathway of DNA double-strand breaks and its application in cancer radiotherapy (Invited Talk)	2017
National Seminar on Cancer Prevention and Treatment Strategies, from December, 22-23, 2017	National	Department of Zoology, University of Rajasthan, Jaipur	Molecular mechanism of non-homologous end- joining (NHEJ) repair pathway: A novel approach for cancer treatments (Invited Talk)	2017
International Conference on Environmental Changes and Their impact on Plants and Human Health from January 15-17, 2018	International	St. Wilfred's PG College, Jaipur	Elucidation of in Cancer Radiotherapy (Invited Talk)	2018
International Conference on Structure and Dynamics of Biomolecules held at DDU Gorakhpur University, Gorakhpur	International	DDU Gorakhpur, Gorakhpur (UP)	XRCC4: A key player in NHEJ repair pathway of DNA double strand breaks (Invited Talk)	2017



(UP) from January, 27- 28 th , 2017.				
10 th International 3R Symposium held at Hotel Ichibata, Matsue City, Shimane Japan from November, 13-17, 2016.	International	Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan	XRCC4: phosphorylation target of DNA-PK in DNA double-strand break repair	2016
National Conference on Environmental challenges human Health and Society held at University of Rajasthan, Jaipur from September 08-10, 2016	National	University Maharaja College, Jaipur and International Society for Life Sciences	<i>In vitro</i> conservation and evaluation of biological activity of some endangered ethnomedicinally important plants of Jaipur District, Rajasthan	2016
International Conference on Biotechnology and Nanotechnology, held at IIS University, Jaipur from January 30- February 01, 2016	International	IIS University, Jaipur under the auspices of Indian Science Congress Association, Jaipur Chapter	Targeting non- homologous end joining repair pathway of DNA double strand breaks: A novel approach to improve Cancer Radiotherapy (Invited Talk)	2016
15th International Congress of Radiation Research held at Kyoto, Japan from May, 25-29, 2015.	International	IARR, USA and Japan Radiation Research Society, Japan	XRCC4 phosphorylation by DNA–PK essential for DNA double–strand break repair.	2015
International Conference on Medical Physics, Radiation Protection and Radiobiology, held at SMS Medical College & Hospital Jaipur from 20- 22 February, 2015	International	Department of Radiobiologi cal Physics, SMS Medical College & Hospital, Jaipur.	<i>In Cellulo</i> phosphorylation of XRCC4 protein: A predictive marker of DNA-PK activity.	2015



20 th Annual Meeting on the Sensitization of Cancer Treatments held at Kochi, Japan on 07 th June, 2014.	International	International Association for Sensitization of Cancer Treatments, Japan	Involvement of DNA-PK phosphorylation sites in XRCC4 in the functional regulation of nonhomologous end- joining repair pathway.	2014
3 rd Asian Congress of Radiation Research, Beijing, China May, 10- 13 2013.	International	Asian Association for Radiation Research and National Institute for Radiological Protection, China CDC	XRCC4: The Genuine Target of DNA-PK in Non Homologous End Joining (Invited Talk)	2013
3 rd Asian Congress of Radiation Research, Beijing, China May, 10- 13 2013.	International	Asian Association for Radiation Research and National Institute for Radiological Protection, China CDC	Identification of phosphorylation sites in XRCC4 mediating its functional regulation by DNA-PK	2013
28th RBC-NIRS International Symposium on "Radiation-associated Repair Proteins and DNA Repair Network" Kyoto, Japan from November 29-30, 2012	International	Radiation Biology Center, Kyoto University Kyoto, Japan	Regulation of non- homologous end-joining repair mechanism of DNA double strand break by kinase activity of DNA-PK	2012
55 th Annual Meeting of Japan Radiation Research Society, held at Sendai , Japan from September 06-08 th 2012	International	Japan Radiation Research Society and Tohoku University, Sendai, Japan	Analysis of XRCC4 phosphorylation <i>in vitro</i> and <i>in cellulo</i> by DNA-PK	2012
International Conference on Cancer Prevention,	International	Centre for Advanced	Role of DNA-PK phosphorylation in non-	2012





Diagnosis and Treatment held at Jaipur (INDIA) from January 21-22, 2012.		Studies, Department of Zoology, University of Rajasthan, Jaipur and Indian Society for Radiation Biology, India	homologous end joining repair pathway of DNA- double strand break.	
14 th International congress of Radiation Research, held at Warsaw, POLAND, From August, 27- September 01 st 2011	International	International Association for Radiation Research and Polish Radiation research Society, Poland	"DNA-PK phosphorylation in XRCC4 and XLF and its role in DNA double- strand break repair through nonhomologous end joining. (Also awarded IARR-Young Scientist Travel Award)	2011
56 th Annual meeting of Radiation Research Society, USA held at Maui, Hawaii, USA from September 25-29 th 2010.	International	Radiation Research Society, USA	Identification of DNA-PK phosphorylation targets in XRCC4 & XLF proteins and their physiological significance in the process of DNA double strand break repair	2010
International Ataxia- Telangiectasia Workshop ATW 2010 held at Redondo Beach, CA, USA from April 11-14, 2010	International	University of California Los angeles, USA	DNA-PK phosphorylation targets in XRCC4 and XLF proteins in DNA double- strand break repair	2010
53 rd Annual Meeting of Japan Radiation Research Society and NIRS International Symposium on "Centrosome in DNA damage response and diseases" was held at Kyoto, Japan from October 20-22, 2010.	International	Japan Radiation Research Society, Japan	DNA-PK phosphorylation mediated regulation of NHEJ repair process of DNA double strand break	2010
Annual Meeting of International Association	International	International Association	DNA-PK phosphorylation sites	2010



for Sensitization of Cancer Treatments held at Gifu, Japan on June 19 th , 2010.		for Sensitization of Cancer Treatments, Japan	essential for DNA Double-Strand Break Repair and its possible application in Cancer Therapy.	
International Young Scientist Award Lecture in the 12 th Symposium on Sensitization of Cancer Treatment, held at Nara , JAPAN from February, 13-14 2010.	International	International Association for Sensitization of Cancer Treatments, Japan	The true substrate of DNA-dependent protein kinase (DNA-PK) and the significance of phosphorylation	2010

10. Organizing Sec./Convener of conference/seminar/webinar :

Year
2015
2018

11. Resource Person:

In training Programme	Gyan Ganga, State Level Subject Specific Short Term				
	Online Training Program "Initiative for Teaching-				
	Learning Excellence in Zoology" jointly organized				
	by SPC Government College, Ajmer and				
	Commissionerate College Education Rajasthan,				
	Jaipur from February 15-20th, 2021				
In conferences/Seminars	1. National Conference on Nanomaterials in				
(Chair/Co-Chair/of Session)	Biology (NCNB 2019) held at Department of				
	Zoology, University of Rajasthan, Jaipur				



from 09th to 12th October, 2019 (contributed talk)

- National Conference on Environment: Issues, Challenges and Strategies organized by SPC Government College, Ajmer from October 1-2^{nd,} 2018 (Co-chair)
- 3. International Conference on Recent Trends in Environment & Natural Sciences – ICRTENS – 2019 organized by Government Science College, Sikar, Rajasthan, India from February 12-13, 2019 (Invited Talk and Chaired a session)
- International conference on Fight Against Cancer (FAC Con-2017), CSJM University, Kanpur from 05- 07th October, 2017 (Invited Talk)
- International Conference on Environmental Awareness Protection & New Challenges held at St. Wilfred's PG College, Jaipur from 03-04th February, 2017. (Invited Talk)
- 6. National Seminar on Cancer Prevention and Treatment Strategies, organized by Department of Zoology, University of Rajasthan, Jaipur from December, 22-23, 2017 (Invited Talk)
- 7. International Conference on Environmental Changes and Their impact on Plants and Human Health from January 15-17, 2018 (Invited Talk)
- 8. International Conference on Structure and Dynamics of Biomolecules held at DDU Gorakhpur University, Gorakhpur (UP) from January, 27-28th, 2017. (Invited Talk)
- 9. International Conference on Biotechnology and Nanotechnology, held at IIS University, Jaipur from January 30-February 01, 2016 (Invited Talk)
- 3rd Asian Congress of Radiation Research, Beijing, China May, 10-13 2013 (Invited Talk)



12. Research Publications (Important Selected Research Papers)

Title of Paper	Name of Journal with Impact factor & ISSN No.	Volume and	,	Impact Factor	Google Index
DNA-Dependent Protein Kinase in DNA Damage Response: Three Decades and Beyond	Journal of Radiation and Cancer Research; ISSN - Print: 2588- 9273, Online: 2468-9203	Volume 11 Issue 4 October- December 2020	-		Yes
Metal nanoparticles and medicinal plants: Present status and future prospects in cancer therapy,	Materials Today: Proceedings; ISSN: 2214-7853 (Published by Elsevier, Amsterdam)	31 (2020) 662–673	-		Yes
<i>In cellulo</i> phosphorylation of DNA double-strand break repair protein XRCC4 on Ser260 by DNA-PK.	Research,	700–708;	3	1.950	Yes
complementing group 4 promotes apoptosis by	Research (Published by <i>Elsevier, Amsterdam</i>);	Volume 362 450–460; 2018	3	3.383	Yes
In cellulo phosphorylation of XRCC4 Ser320 by DNA-PK induced by DNA damage.	Journal of Radiation Research (<i>Published by</i> <i>Oxford Press;)</i> ISSN 0449-3060	Volume 57(2): Pages 115-20, 2016	12	1.950	Yes
Lysine 271 but not lysine 210 of XRCC4 is required for the nuclear localization of XRCC4 and DNA ligase IV,	Biochemical and Biophysical Research Communications	Volume 461, Issue 4, 12 June 2015, Pages 687– 694; 2015	15	2.985	Yes



Asparagine 326 in the extremely C-terminal region of XRCC4 is essential for the cell survival after irradiation,	Biophysical Research	Volume 457(4); Pages 526-31. 2015	5	2.985	Yes
Ionizing radiation-induced XRCC4 phosphorylation is mediated through ATM in addition to DNA-PK,	Japan Academy,	Volume 90: 365-372. Pages 365- 372; 2014	7	2.77	Yes
C-terminal region of DNA ligase IV drives XRCC4/DNA ligase IV complex to chromatin,	Biochemical and Biophysical Research Communications (Published by <i>Elsevier, Amsterdam;</i> ISSN: 0006-291X	Volume 439: Issue 2, Pages 173– 178 2013	19	2.985	Yes
Panax ginseng on the	Biological and Pharmaceutical Bulletin (Published by Pharmaceutical Society of Japan) ISSN: 0918-6158	Volume 26 (3), page no. 308-312; 2003	118	1.828	Yes



<i>Emblica officinalis</i> fruit extract against arsenic induced oxidative stress in Swiss albino mice.	Interact. ISSN: 0009-	Volume 180(1): Page 20-30,	103	. 3.723	Yes
Protective Effect of Mentha piperita against Arsenic- Induced Toxicity in Liver of Swiss Albino Mice	Pharmacology &	Volume 100 (4): 249-257; 2007	100	2.651	Yes
<i>Spirulina fusiformis</i> provides protection against mercuric chloride induced oxidative stress in Swiss albino mice.	ISSN: 0278-6915. (Published by:-Elsevier,	Volume 45(12): Page 2412-9,	85	4.679	Yes

13. Research Projects:

Title of the Project	Year	Name of funding	Fund available/
		agency	utilized
Biotechnological approaches for Conservation of Endangered Ethnomedicinal Plants and evaluation of their possible therapeutic applications: Promotion of Indigenous Knowledge through Local health traditions among rural tribes of Rajasthan	2018-20	Awarded Major Research Project from Department of Science and Technology, Government of Rajasthan by letter no. F.7(3) DST/BTR & D/EAC/2018/3157 (2018-2020) as a Co- Investigator	University of Rajasthan, Jaipur
Arsenic induced toxicity DMSA (A chelating agent) and <i>Mentha piperita</i> (A herbal extract).	2014-16	UGC-CRO, Bhopal	1.90
Elucidation of DNA damage recognition/repair mechanism and its application to cancer therapy	2012-14	Tokyo Biochemical Research Foundation, Japan	Post-Doctoral Research Fellowship and Research Grant of about 1.5 Million Yen



Mechanism of Recognition/Repair of DNA Double-Strand Breaks and Its Application to Cancer Therapy		Promotion of Science, Japan	Post-Doctoral Research Fellowship and Research Grant of about 2.0 Million Yen
Modulatory influence ofin Swiss albino mice.	2004-06	UGC-CRO, Bhopal	1.00

14. Research Supervision:

• Basic Field of specialization:

Ph.D.

Name of Student	Title of thesis	Present status	Date and Year of Award, if so
-	-	-	-

✤ M. Phil.

Name of Student	Title of Dissertation	Present status	Date and Year of Award, if so
-	-	-	-

15. Monograph/ Book / Chapter (in Edited Book)/Chapters in study material of Open universities

• Book (Single Author)

Title of Book	ISBN/ ISSN No.	Publisher with Place	Year of Publication

Chapter(s) in Book (Edited / multi-author)

Title of Chapter/Book	Authors / Editors	Name of the Book with ISBN/ ISSN No.	Publisher with Place	Year of Publication
Applied Zoology, Ethology and Biostatistics	A.Sharma, P. Sankhla, M.K.Sharma	Applied Zoology,	College Book House	2020



		Ethology and Biostatistics		
Role of Brassica compestris (Var Sarson) in modifying arsenic induced toxicity	P.D.Meena and J.K.Chawla	Biodiversity, Environmental Challenges and Wildlife Conservations ISBN- 81-8952 -00-2	Banyan Publication	2018
A Bird Eye View on Medicinal Plants used for curing diabetes in traditional herbal medicine around rural areas of Jaipur district, Rajasthan	P.D.Meena and J.K.Chawla	Biodiversity, Environmental Challenges and Wildlife Conservations ISBN- 81-8952 -00-2	Banyan Publication	2018
Studies on ecology and ethnomedicine: Exploring links between current environmental crisis and indigenous medical practices in present scenario	P.D.Meena and J.K.Chawla	Biodiversity, Environmental Challenges and Wildlife Conservations ISBN- 81-8952 -00-2	Banyan Publication	2018
Environmental Challenges and Sustainable Development	H.Pareek, M.K.Sharma and S.Sharma	ISBN:- 978-81- 89527-04-4	ISLS, Jaipur and Banyan Publication, Jaipur	2017
An Overview on arsenic induced toxicity and human health	S.K.Sharma, M.K.Sharma, H.Pareek and M.Kumar	Environmental Challenges and Sustainable Development, ISBN:- 978-81- 89527-04-4	ISLS, Jaipur and Banyan Publication, Jaipur	2017
Evaluation of phytochemical, nutritional and therapeutic values of <i>Moringa olifera</i>	R.Pareek, S.Sharma, M.K.Sharma and H.Pareek	Environmental Challenges and Sustainable Development,	ISLS, Jaipur and Banyan Publication, Jaipur	2017



Radiosensitzation Strategies through Modification of DNA Double-Strand Break Repair.	In "DNA Repair - New Research Directions", InTech Europe University Campus STeP Ri, Slavka Krautzeka 83/A, 51000 Rijeka, Croatia,	ISBN:- 978-81- 89527-04-4 In "DNA Repair - New Research Directions" ISBN 980-953- 307-746-3.	Intech Europe	2012
Phytodrugs: Possible ameliorators of arsenic toxicity, Pages 363-365	Edited by Jiin- Shuh Jean, Jochen Bundschuh and Prosun Bhattacharaya.	'Arsenic in Geosphere and Human Diseases'; ISBN- 978-0- 415-57898-1	CRC Press, Taylor and Franscis Group, Boca Raton, London;	Published- 26 th April, 2010.
Role of arsenic-induced oxidative stress: Efficacy of combined combined administration of meso 2,3 dimercaptosuccinic acid (DMSA) and Ellagic acid in liver of Swiss albino mice, 361-162	Edited by Jiin- Shuh Jean, Jochen Bundschuh and Prosun Bhattacharaya.	'Arsenic in Geosphere and Human Diseases'; ISBN- 978-0- 415-57898-1	CRC Press, Taylor and Franscis Group, Boca Raton, London;	Published- 26 th April, 2010.

16. Sports Activities:- NA

17. Extra Curricular Activities: NA

18. Any Other Relevant Information/Contributions

Total citations of Research Papers - 780

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INTERNATIONAL PATENT:-

Patent application no. J90187A1 entitled **"A method for measuring an activity of a DNAdependent protein kinase, a method for determining a radiosensitivity of a test cell, a method for determining a cancer morbidity of a test cell, a screening method for inhibitor or activator of DNA-dependent protein kinase and a kit therefore**" files at Japan Patent Office, Japan, 2014 and published in 2016.