

Department of Biochemistry



Dr. S.K. Dubey

DESIGNATION:	Assistant Professor
QUALIFICATION:	Ph.D.
SPECIALISATION:	Cancer chemoprevention, Cancer stem cells, Curcumin bioconjugates
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Teaching Experience and Courses Taught

Teaching Experience: 9 years

Courses Taught are as follows

- Elementary Plant Biochemistry BBC-261
- Fundamentals of Biochemistry BBC-361
- Chemistry of Biomolecules BBC-500
- General Biochemistry BBC-501
- Basic techniques in Biochemistry BBC-505
- Biochemical techniques BBC-510
- Food and Nutritional Biochemistry BBC-620
- Intermediary metabolism-I BBC-641
- Intermediary metabolism-II BBC-642
- Plant Biochemistry BBC-645

- Animal Biochemistry BBC-651
- Carbon and Nitrogen metabolism BBC-655
- Advanced techniques in Biochemistry BBC-710
- Biomembranes BBC-751
- Current Topics in Biochemistry BBC-765

Research Interests

- Natural products, Cancer chemoprevention, Bioprospecting

Research Projects

- PI in Uttarakhand Council for Biotechnology funded project on Design, synthesis, characterization, in silico and in vitro evaluation of novel curcumin analogs as adjunct drugs targeting breast cancer stem cells (CSCs) (2023-2026) (Budget : 11.35 Lakhs)
- Co-PI in DST funded project on “Synthesis, characterization and testing of immune-potential of nano-particles adjuvanted oral vaccine of Salmonella typhimurium in Poultry. (2020-2023) (Budget: 44.039 Lakhs)
- Co-PI in DST funded project on “Collection, screening and cataloguing Fagopyrum spp. Cultivars from Himalayan regions and development of package and practices followed by value addition for livelihood enhancement of SC communities” 2025-26 (18 months) (Budget: 46.236 Lakhs)

Publications

e-Content Developed 22 e-content text modules for the course” Fundamentals of Biochemistry”.

Research Papers

Research papers:

35. Gairola K, Singh G, Bahuguna A, Pujari R, Keshwarwani, **Dubey SK***. (2024) Computational simulation guided prediction of the inhibitory effect of Curcumin, Diallyl sulfide, and its

- conjugates on ALDH1A1 to target Breast Cancer stem cells (BCSCs). *Journal of BioMolecular structure and dynamics*. (Accepted) (IF- 2.7)
34. Bahuguna A, Arti, **Dubey SK***(2024) Phytochemical Profiling, Molecular Docking, and ADMET Evaluation of Essential Oils from *Anaphalis busua* and *Anaphalis margaritacea* in Uttarakhand's Himalayan Terrain. *Phytomedicine plus* 4:100645
<https://doi.org/10.1016/j.phyplu.2024.100645>
 33. Rawat S, Rai S, Sangeeta S, Kumar A, Ramchandran P, Sharka Sk, **Dubey Sk**, Pakash A, Joshi R (2024) Application of Plant-Based Hydrocolloids on the Textural Profile of Vegan Gummies Supplemented with Turmeric and Black Pepper. *International Journal of food science*
<https://doi.org/10.1155/2024/7127635> (IF- 3.9)
 32. Bargali P B, Kumar R, Devrani A, Mahawer S, Karkoti H, Prakash O, Kumar S, Rawat S, Rawat DS, **Dubey SK**, Seth CS, Ahmad F (2024) Essential oils work synergistically to mitigate pathogenic impact of *Meloidogyne incognita*, *Rhizoctonia solani* and *Sclerotinia rolfsii*. *Biocatalysis and Agricultural Biotechnology* 58(2024) 103160 (IF: 4.0)
<https://doi.org/10.1016/j.bcab.2024.103160>
 31. Verma B, Arya S, Kabdal T, Arya V, Prakash O, Kumar R, **Dubey SK** Rawat DS, Tripathi S (2024) Phytochemical Analysis and Therapeutic Applications of Some Wild Edible Fruits Growing in Uttarakhand Himalayas". *European Journal of Chemistry* 15(2): 110-119
DOI: [10.5155/eurjchem.15.2.110-119.2520](https://doi.org/10.5155/eurjchem.15.2.110-119.2520)
 30. Rathore AS, Bhatt P, Vatsya S, Singh JL, Kumar R, **Dubey SK** (2023). Effect of fenbendazole and ivermectin on antioxidant status of goats suffering from gastrointestinal nematodes. *The Pharma innovational journal* SP-12(8): 31-35
 29. Arti, Bahuguna A, Arya A, **Dubey SK***, Singh K*, Kumar R, Prakash O, Rawat DS, Arya P (2023). Validation of biological activities and characterization of extracts of *Anaphalis margaritacea* (L.) BENTH. & HOOK.F. from hilly terrains of Uttarakhand Himalaya. *The Bioscan* 18(2):75-80.
 28. Gururani S, Gairola K, **Dubey SK***. Singh K*, Kumar R, Prakash O, Arya P (2023). Comparative evaluation of phytochemical composition, antioxidant, anti-inflammatory, and antidiabetic activities of *curcuma amada* and *curcuma longa* essential oil from Uttarakhand, India, *The Bioscan* 18(1):7-12.
 27. Bahuguna A, **Dubey SK***(2023) Overview of mechanistic potential of probiotics and prebiotics in cancer chemoprevention. *Molecular Nutrition and Food Research* 67(19): e2300221
<http://doi.wiley.com/10.1002/mnfr.202300221> (IF-5.2)
 26. Bahuguna A, **Dubey SK***(2023) Relevance of Tumor Microbiome in Cancer Incidence, Prognosis, and its Clinical Implications in Therapeutics. *Biochimica et Biophysica Acta (BBA)-Reviews on Cancer*, 1878(5), 188956 <https://doi.org/10.1016/j.bbcan.2023.188956> (IF-11.2)
 25. Arya A, **Dubey SK***, Lauthani A, Bahuguna A, Kumar R, Prakash O, Rawat DS.(2023) Phytochemical profile and antioxidant potential of extracts of *Callicarpa macrophylla* Vahl. from Uttarakhand Himalayan region. *International Journal of Plant Based Pharmaceuticals*, 3(2), 131-140 <https://doi.org/10.29228/ijpbp.25>
 24. Garia V, **Dubey SK***, Bahuguna A, Kumar R, Prakash O, Rawat DS.(2023) Composition, antioxidant, and anti-inflammatory activities of different polarity extracts of *Artemisia nilagirica* collected from hilly areas from the Himalayan terrain of Uttarakhand. . *European journal of Chemistry* 14(3), 323-329 <https://dx.doi.org/10.5155/eurjchem.14.3.323-329.2449>
 23. Mahawer S, Kumar R, Prakash O, Rawat DS, **Dubey SK** , Olivera M. (2023). A review of phytochemical and pharmacological properties of *Alpina malaccensis* (Burm. F.) Roscoe. (Zingiberaceae) *Current topics in Medicinal Chemistry* 23(20), 1964-1972 DOI: [10.2174/1568026623666230522104104](https://doi.org/10.2174/1568026623666230522104104) (IF- 3.4)
 22. Pujari R, **Dubey SK***. (2024) Relevance of glyco-biomarkers and glycan profiles in cancer stem cells. *Glycobiology*, 34(6) cwad019. <https://doi.org/10.1093/glycob/cwad019> (IF- 4.3)
 21. Bahuguna A, **Dubey SK***,Garia V, Kumar R, Prakash O, Rawat DS.(2023) Composition,antioxidant, and anti-inflammatory activities of different polarity extracts of

- Anaphalis busua from the Himalayan terrain of Uttarakhand. *European journal of Chemistry*, 14(1), 114-120. <https://dx.doi.org/10.5155/eurjchem.14.1.114-120.2395> (IF- 0.6)
20. Sethi S, Prakash O, Kumar R, **Dubey SK**, Arya M, Pant A. (2022) Phytochemical Analysis, Antioxidant and Antifungal Activity of Essential oil and Extracts of *Alpiniamalaccensis* (Burm.f.) Roscoe flowers. *Brazilian Journal of Pharmaceutical Sciences* 58, e201209 DOI: [10.1590/s2175-97902022e201209](https://doi.org/10.1590/s2175-97902022e201209) (IF- 1.6)
 19. Gairola K, Gururani S, Kumar R, Prakash O, Agarwal S, **Dubey SK***. (2022) Composition, Antioxidant and Anti-inflammatory activities of Hexane and Methanol extracts of *Acmella uliginosa* form Terai region of Uttarakhand. *Brazilian Journal of Pharmaceutical Sciences* 58, e20353 DOI: [10.1590/s2175-97902022e20353](https://doi.org/10.1590/s2175-97902022e20353) (IF- 1.6)
 18. Kabdal T, Himani, Kumar R, Prakash O, Nagarkoti K, Rawat DS, Srivastava RM, Kumar S, **Dubey SK** (2022) Seasonal variation in the essential oil composition and biological activities of *Thymus linearis* Benth. collected from Kumaun region of Uttarakhand, India. *Biochemical Systematics and Ecology* 103 (2022) 104449. <https://doi.org/10.1016/j.bse.2022.104449> (IF- 1.6)
 17. Gururani S, Gairola K, Kumar R, Prakash O, Agarwal S, **Dubey SK***. (2022) Altitudinal variations in phytochemical composition and biological activities of *Curcuma longa* accession from Uttarakhand, Himalayan region. *Journal of food processing and preservation* 46(3) e16384. DOI: [10.1111/jfpp.16384](https://doi.org/10.1111/jfpp.16384) (IF- 2.5)
 16. Gairola K, Gururani S, Bahuguna A, Garia V, Pujari R, **Dubey SK***. (2021) Natural products targeting cancer stem cells: Implications for cancer chemoprevention and therapeutics. *Journal of Food Biochemistry*. 24(7)e13772 <https://doi.org/10.1111/jfbc.13772> (IF- 4.00)
 15. Gairola K, Gururani S, Kumar R, Prakash O, Agarwal S, **Dubey SK***. (2021) Composition, Antioxidant and Anti-inflammatory activities of essential oil of *Acmella uliginosa* from Terai region of Uttarakhand. *Trends in Phytochemical research*. 5 (1), 44-52. <https://doi.org/10.30495/tpr.2021.680495>
 14. Mishra H, Kesharwani RK*, Singh DV, Tripathi S, **Dubey SK***, Misra K. (2019) Computational simulation of inhibitory effects of curcumin, retinoic acid, and their conjugates for GSK-3 beta. *Network Modeling Analysis in Health Informatics and Bioinformatics*. 8: 3. <https://doi.org/10.1007/s13721-018-0177-x> (IF-1.20)
 13. Srivastava RM, Singh S, **Dubey SK**, Misra K, Khar A. (2011). Immunomodulatory and therapeutic activities of curcumin. *International Immunopharmacology*, 119(3), 331-341. DOI: 10.1016/j.intimp.2010.08.014 (IF-5.6)
 12. Kakarala M, **Dubey SK**, Dobry C, Xijian P, Murillo G, Parikh S, Amarasinghe C, Mehta R, Brenner DE. (2011). Vitamin D compounds induce BRCA1 expression and inhibit breast stem cells. *Cancer Research*, 71(8 supplement) – 1842. <https://doi.org/10.1158/1538-7445.AM2011-1842> (IF-11.2)
 11. Krishna S[#], Ray A[#], **Dubey SK[#]**, Larrouy-Maumus G, Chalut C, Castanier R, Noguera A, Gilleron M, Puzo G, Vercellone A, Nampoothiri KM, Nigou J. (2011) Lipoglycans contribute to innate immune detection of mycobacteria. *PLoS One*, 6(12):e28476. (#equal contribution) DOI: [10.1371/journal.pone.0028476](https://doi.org/10.1371/journal.pone.0028476) (IF-3.75)
 10. Mythri RB, Harish G, **Dubey SK**, Misra K, Bharath MMS. (2011) Glutamoyldiester of the dietary polyphenol curcumin offers improved protection against peroxynitrite mediated nitrosative stress and damage of brain mitochondria in vitro: Implications for Parkinson's disease. *Molecular and Cellular Biochemistry*, 347(1-2):135-43. DOI: [10.1007/s11010-010-0621-4](https://doi.org/10.1007/s11010-010-0621-4) (IF-3.84)
 9. Kakarala M, **Dubey SK**, Tarnowski M, Cheng C, Liyanage S, Tazi K, Sen A, Djuric Z, Brenner DE. (2010) Ultralow flow liquid chromatography assay with UV detection for piperine quantitation in human plasma. *Journal of Agricultural Food Chemistry*, 58 (11), 6594-6599. DOI: [10.1021/jf100657r](https://doi.org/10.1021/jf100657r) (IF-6.1)
 8. Harish G, Mythri RB, Venkateshappa C, **Dubey SK**, Misra K, Singh N, Vali S, Bharath MMS. (2010). Bioconjugates of curcumin display improved protection against glutathione depletion mediated oxidative stress in a dopaminergic neuronal cell line: Implications for Parkinson

- disease. *Bioorganic and Medicinal Chemistry* 18, 2631-2638. (IF-3.5)
DOI: [10.1016/j.bmc.2010.02.029](https://doi.org/10.1016/j.bmc.2010.02.029)
7. **Dubey SK**, Sharma AK, Narayan U, Misra K, Pati U. (2008) Design, synthesis, and characterization of some bioactive conjugates of curcumin with glycine, glutamic acid, valine and demethylenated piperic acid and study of their antimicrobial and antiproliferative properties. *European journal of medicinal chemistry*. 43, 1837-1846. DOI: [10.1016/j.ejmech.2007.11.027](https://doi.org/10.1016/j.ejmech.2007.11.027) (IF-6.7)
 6. **Dubey SK**, Dwivedi V, Misra K. (2007) Novel method for synthesis of monoesters of symmetric diphenolic compounds like curcumin (1, 7-Bis (4-hydroxy-3-methoxy phenyl) 1, 6-hepta diene-3, 5-dione) via solid phase synthesis. *Synthetic communication*, 37, 4265-4271. <https://doi.org/10.1080/00397910701575863> (IF-2.1)
 5. **Dubey SK**, Pandey A, Mishra R, Kapoor N, Misra K. (2007) Site specific drug delivery by non-viral mode. *Indian journal of biotechnology*, 6, 159-174. (IF-0.324)
 4. **Dubey SK**, Pandey A, Bajaj AK, Misra K. (2007) Some commercial azo dyes as Inhibitors of mushroom tyrosinase DOPA oxidase activity. *Journal of Pharmacology and toxicology*, 2(8), 718-724. DOI: [10.3923/jpt.2007.718.724](https://doi.org/10.3923/jpt.2007.718.724)
 3. **Dubey SK**, Misra K, Tiwari A, Bajaj AK. (2006). Chemically induced pigmentary changes of human skin: interaction of some azo dyes with human DNA. *Journal of pharmacology and toxicology*, 1(3), 234-247. DOI: [10.3923/jpt.2006.234.247](https://doi.org/10.3923/jpt.2006.234.247)
 2. **Dubey SK**, Sharma A, Kumar A, Pati U, Tiwari A, Misra K. (2006) Design and synthesis of a modified RNA- curcumin-demethylenated piperoyl conjugate as a telomerase targeted antisense prodrug, its activity against human cancer cell lines Hela & KB. *Medicinal Chemistry Research*, 15(1-6), 164-165. <https://doi.org/10.1007/s00044-006-1503-x> . (IF-2.351)
 1. Bajaj AK, **Dubey SK**, Misra K. (2004) A simple spectroscopic technique proposed for scanning the depigmenting potential for azo dyes. *Contact Dermatitis*, 51(2), 97-98. DOI: [10.1111/j.0105-1873.2004.0396j.x](https://doi.org/10.1111/j.0105-1873.2004.0396j.x) (IF-5.5)

Books/Book Chapters

Book Edited/Adapted

- Editor of the book entitled “Natural Products and nano-formulations in Cancer Chemoprevention” to be published by CRC Press (2023)
- Contributed additional content and questions with answers for the development of 4 book chapters in an Indian adaption of the book “Textbook of Biochemistry with Clinical Correlations”, 7th Edition by Thomas M. Devlin (Editor) Published by Wiley India (2022) (ISBN 9789354641558)
- **Contributed** additional content and questions with answers for the development of 3 book chapters in an **International** adaption of the book “**Essential Biochemistry, 7th Edition by Charlotte W. Pratt** (Editor) Published by **Wiley India** (2024)

Book Chapters

1. Gururani S, Gairola K, **Dubey SK***. (2022), Antioxidant and immunomodulation In: Kesharwani, R.K., Keservani, R.K., Sharma, A.K. (eds) Immunomodulators and Human Health. Springer, Singapore. pp 101-121, https://doi.org/10.1007/978-981-16-6379-6_4 ISBN- 978-981-16-6378-9
2. Gairola K, Gururani S, **Dubey SK***. (2022), Polyphenols and its effect on immune system, In: Kesharwani, R.K., Keservani, R.K., Sharma, A.K. (eds) Nutraceuticals and Functional Foods in Immunomodulators. Springer, Singapore. pp. 121-140 DOI: https://doi.org/10.1007/978-981-19-2507-8_5 ISBN- 978-981-19-2506-1
3. Gairola K, **Dubey SK***, Bahuguna A, Shruti. (2023), Nutrigenomics in cancer chemoprevention. In Dubey SK (Ed.) Natural products and nano-formulations in cancer chemoprevention, CRC Press pp. 165-181
4. Bahuguna A, **Dubey SK***, Gairola K, Pujari R. (2023), Overview of natural products and Nano formulations in cancer chemoprevention. in Dubey SK (Ed.) Natural products and nano-formulations in cancer chemoprevention, CRC Press pp. 1-19
5. Naudiyal N, Rana GS, Adhikari A, **Dubey SK.** (2023), Fat Soluble Vitamins in Cancer Chemoprevention. in Dubey SK (Ed.) Natural products and nano-formulations in cancer chemoprevention, CRC Press pp. 39-55

UG/PG/PHD student information

- Supervised 7 PG Thesis
- Currently guiding 03 Ph.D. students

Patents

Patents Filed

Application No: 201811008983 dated 12/03/2018

A lime processed turmeric powder with enhanced recovery of nanoforms of curcuminoids inducing mesenchymal stem cells derived osteoblast differentiation and mineralization.”

Application No: 202511010301 dated 07/02/2025

Oral Vaccine against *Salmonella typhimurium* for Poultry salmonellosis

Additional responsibilities

- Co-staff counselor for Basic Sciences and Humanities Society (2022-23)
- Joint-faculty Secretary for the Board of Faculty of Basic Sciences and Humanities, G.B. Pant University of Agriculture and Technology, Pantnagar (2022-24)
- Joint Coordinator, B. Tech (Biotech) program, C.B.S.H., G.B. Pant University of Agriculture and Technology, Pantnagar. (Nov 2022-Till date)
- Staff counselor Post Graduate (PG) Society, G.B. Pant University of Agriculture and Technology, Pantnagar (2022-23)
- Staff counselor for Basic Sciences and Humanities Society (Jan 24- till date)
- Faculty Secretary for the Board of Faculty of Basic Sciences and Humanities, G.B. Pant University of Agriculture and Technology, Pantnagar (July 2024-till date)

Professional Achievements and Awards

Honors/Awards

- **2002** Qualified NET-LS (National Eligibility Test for lectureship) and JRF (Junior Research Fellowship) conducted by UGC-CSIR, India
- **1999** Bronze Medal in B.Sc. Biology Group, Ewing Christian College, University of Allahabad.India.
- **2022** Best researcher award in the International Research Awards on Science, Technology and Management - INSO, Organized by VDGGOOD Professional Association, India.

Post Doctoral Experience:

- **May 2009 - Dec 2011:** Postdoc Fellow, University of Michigan, Ann Arbor, MI, USA
- **Apr 2007 - Mar 2009:** Postdoc Fellow, Institute of Pharmacology and Structural Biology,CNRS, Toulouse, France

Membership of the professional bodies

- Life member of “Society of Biological Chemists”, India.
- Life member of “National Academy of Biological Sciences”, India.

Links

Lab webpage <https://stemcellresearch774.wixsite.com/stemcell>

Google Scholar Link: [Click Here](#)

Research Gate account Link: [Click Here](#)

ORCID Id: [Click Here](#)

Useful Links