

Biodata



Dr. Ashish Dwivedi,
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Scientist, Photobiology Division,
Systems Toxicology & Health Risk Assessment Group,
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Educational Qualification:

- **Master of Science:** 2005-2007: Biotechnology, Babasaheb Bhimrao Ambedkar Central University (BBAU), Lucknow, India.
- **Doctor of Philosophy:** 2008-2015: Department of Radiotherapy, KGM University, Lucknow and Indian Institute of Toxicology Research, Lucknow, India.
- **Post Graduate Diploma:** 2015: Intellectual Property Rights, IGNOU, New Delhi, India.

Position held:

- ❖ **2019- Present:** Scientist, Photobiology Division, CSIR-Indian Institute of Toxicology Research, Lucknow, Uttar Pradesh, India.
- ❖ **2018- 2019:** Post-Doctoral Fellow, Faculty of Biology, Israel Institute of Technology, Technion, Israel.
- ❖ **2017- 2018:** Research Associate, Colorado University, Anschutz Medical Campus, US.
- ❖ **2015- 2017:** Dr. D.S. Kothari Post-Doctoral Fellow (UGC, New-Delhi), India.
- ❖ **August 2014-December 2014:** Assistant Professor, Department of Environmental Microbiology, Babasaheb Bhimrao Ambedkar Central University (BBAU), Lucknow, UP, India.

Area of Specialization:

- ❖ Photosensitization, Phototoxicity, Photoallergy, and Photocarcinogenicity

Current R&D/S&T Activities

- Establishment of OECD-approved battery of test systems and development of novel and more sensitive test systems as well as methods for photoallergy assessment of Chemicals used in Cosmetics (Essential Oils, Fragrances, Preservatives, Hair dyes, and Colorants).
- Development of 3-D skin equivalent model with sensitive predictive biomarkers for phototoxicity/photogenotoxicity assessment of Chemicals used in Cosmetics/Personal Care Products.
- Identification of natural autophagy activators having anti-photoaging effects.

Honors & Awards

- Guest of honor for the valedictory session for the Hands-on Workshop on "Real-Time PCR - Gene Expression Analysis" Biotech Park, Lucknow on 12th March 2022.
- Dr. D.S Kothari Post-Doctoral Fellowship, UGC (2015)
- Selected in 5th science conclave/INSPIRE Internship Program” A Congregation of Nobel Laureates and Eminent, AMHRD-DST, IIIT, Allahabad.
- CSIR-UGC SRF fellowship 2014
- CSIR-NET- JRF fellowship 2012.
- Third prize in Hindi speech on the occasion of the Hindi week in IITR (CSIR) during 2009-2010, Lucknow.

Membership of Society:

- ❖ Membership of Association of Scientists of Indian Origin Society of Toxicology (ASIO), USA
- ❖ Full Membership of Society of Toxicology (SOT), USA
- ❖ Membership in Indian Photobiology Society, India
- ❖ Bureau of Indian Standards (Cosmetics Sectional Committee PCD 19), India

Book Edited/Published:

- ❖ **Photocarcinogenesis & Photoprotection.** Springer Nature, ISBN-978-981-10-5492-1, 2017.
- ❖ **Advancement in the Pathophysiology of Cerebral Stroke,** Springer Nature, 978-981-13-1453-7, 2018.
- ❖ **Skin Aging & Cancer: Ambient UV-R Exposure.** Springer Nature, 978-981-13-2541-0. 2019.
- ❖ **Skin cancer: Pathogenesis and Diagnosis.** Springer Nature. ISBN 978-981-16-0364-8
- ❖ **Emerging Concepts on Inflammation and its Resolution.** Springer Nature (In-Press)
- ❖ **Relevance of 3-D skin in Cosmetics Toxicity.** Springer Nature (In-Press)

Book Chapters Published:

- **आनुवंशिक रूप से संशोधित (जीएम) फसलें: भारत और विश्व की आवश्यकता,** Vishvigyan Sandesh, Volume,34,2021.
- **त्वचा की प्रकाशीय सुरक्षा " सिर्फ एक सौंदर्य मुद्दे से कहीं अधिक”,** Vishvigyan Sandesh, Volume,34,2021.
- **सौंदर्य प्रसाधन में प्राकृतिक एवं सिंथेटिक सुगंध का प्रभाव.** Vishvigyan Sandesh, Volume,36,2022.

List of Publications:

- 1) Sarika Yadav, [Ashish Dwivedi](#), and Anurag Tripathi (2022). Biology of macrophage fate decision: Implication in inflammatory disorders. *Cell Biology International*. **IF 3.6**
- 2) Saumya Shukla, Deepti Chopra, Sunil Kumar Patel, Sandeep Negi, [Ashish Dwivedi](#), and Ratan Singh Ray (2022). Superoxide anion radical-induced phototoxicity of 2,4,5,6-Tetraminopyrimidine sulfate via mitochondrial-mediated apoptosis in human skin keratinocytes at ambient UVR exposure. *Food and Chemical Toxicology*, Volume 164, June, 112990. **IF 6.02**
- 3) Sonam Chandra, Saba Qureshi, Deepti Chopra, [Ashish Dwivedi](#), Ratan Singh Ray (2022). Involvement of Type-I and Type-II Photodynamic Reactions in Photosensitization of Fragrance Ingredient 2-acetonaphthone. *Photochemistry & Photobiology*. **IF 3.4**
- 4) Priyanka Chauhan, Arpita Bhattacharya, Satyendra Pratap Singh, Sateesh Chandra Gupta, Pratibha Verma, [Ashish Dwivedi](#), Laxman Singh Rajput, Aradhana Mishra (2022).

- Bacillus subtilis suppresses the charcoal rot disease by inducing defense responses and physiological attributes in soybean. *Archives of Microbiology*, Apr 18;204(5):266. **I.F 2.5**
- 5) Srivastav AK, Dubey D, Chopra D, Singh J, Negi S, Mujtaba SF, [Dwivedi Ashish](#) and Ray RS (2020). Oxidative stress-mediated photoactivation of carbazole inhibits human skin cell physiology. *Journal of Cellular Biochemistry*, 121(2), pp. 1273-1282. **I.F 4.237**
 - 6) Singh, J., Srivastva, A.K., Mandal, P., Chandra, S., Dubey, D., [Dwivedi, A.](#), Chopra, D., Tripathi, A. and Ray, R.S., 2018. Under ambient UVA exposure, pefloxacin exhibits both immunomodulatory and genotoxic effects via multiple mechanisms. *Journal of Photochemistry and Photobiology B: Biology*, 178, pp.593-605. **I.F 6.2**
 - 7) Singh, J., [Dwivedi, A.](#), Ray, L., Chopra, D., Dubey, D., Srivastva, A.K., Kumari, S., Yadav, R.K., Amar, S.K., Haldar, C. and Ray, R.S., 2018. PLGA nanoformulation of sparfloxacin enhanced antibacterial activity with photoprotective potential under ambient UV-R exposure. *International Journal of Pharmaceutics*, 541(1-2), pp.173-187. **I.F 5.8**
 - 8) Singh, B.K., Kumar, V., Chauhan, A.K., [Dwivedi, A.](#), Singh, S., Kumar, A., Singh, D., Patel, D.K., Ray, R.S., Jain, S.K. and Singh, C., 2017. Neuronal nitric oxide synthase negatively regulates zinc-induced nigrostriatal dopaminergic neurodegeneration. *Molecular Neurobiology*, 54(4), pp.2685-2696. **I.F 6.1**
 - 9) Chopra, D., Ray, L., [Dwivedi, A.](#), Tiwari, S.K., Singh, J., Singh, K.P., Kushwaha, H.N., Jahan, S., Pandey, A., Gupta, S.K., Chaturvedi, R.K., Pant, A. B., Ray, R. S. and Gupta, K. C., 2016. Photoprotective efficiency of PLGA-curcumin nanoparticles versus curcumin through the involvement of ERK/AKT pathway under ambient UV-R exposure in HaCaT cell line. *Biomaterials*, 84, pp.25-41. **I.F 12.47**
 - 10) Goyal, S., Amar, S.K., [Dwivedi, A.](#), Mujtaba, S.F., Kushwaha, H.N., Chopra, D., Pal, M.K., Singh, D., Chaturvedi, R.K. and Ray, R.S., 2016. Photosensitized 2-amino-3-hydroxypyridine-induced mitochondrial apoptosis via Smac/DIABLO in human skin cells. *Toxicology and Applied Pharmacology*, 297, pp.12-21. **I.F 4.2**
 - 11) Srivastav, A.K., Mujtaba, S.F., [Dwivedi, A.](#), Amar, S.K., Goyal, S., Verma, A., Kushwaha, H.N., Chaturvedi, R.K. and Ray, R.S., 2016. Photosensitized rose Bengal-induced phototoxicity on human melanoma cell line under natural sunlight exposure. *Journal of Photochemistry and Photobiology B: Biology*, 156, pp.87-99. **I.F 6.2**
 - 12) Pal, M.K., Jaiswar, S.P., Srivastav, A.K., Goyal, S., [Dwivedi, A.](#), Verma, A., Singh, J., Pathak, A.K., Sankhwar, P.L. and Ray, R.S., 2016. Synergistic effect of piperine and paclitaxel on cell fate via cyt-c, Bax/Bcl-2-caspase-3 pathway in ovarian adenocarcinomas SKOV-3 cells. *European Journal of Pharmacology*, 791, pp.751-762. **I.F 4.4**
 - 13) Amar, S.K., Goyal, S., Mujtaba, S.F., [Dwivedi, A.](#), Kushwaha, H.N., Verma, A., Chopra, D., Chaturvedi, R.K. and Ray, R.S., 2015. Role of type I & type II reactions in DNA damage and activation of caspase 3 via mitochondrial pathway induced by photosensitized benzophenone. *Toxicology Letters*, 235(2), pp.84-95. **I.F 4.3**
 - 14) Mujtaba, S.F., [Dwivedi, A.](#), Yadav, N., Ch, R., Kushwaha, H.N., Mudiam, M.K., Singh, G. and Ray, R.S., 2015. Superoxide mediated photomodification and DNA damage induced apoptosis by Benz (a) anthracene via mitochondrial mediated pathway. *Journal of Photochemistry and Photobiology B: Biology*, 142, pp.92-102. **I.F 6.2**
 - 15) Tripathi, A.K., [Dwivedi, A.](#), Pal, M.K., Rastogi, N., Gupta, P., Ali, S., BH, M.P., Kushwaha, H.N., Ray, R.S., Singh, S.K. and Duggal, S., 2014. Attenuated neuroprotective effect of riboflavin under UV-B irradiation via miR-203/c-Jun signaling pathway in vivo and in vitro. *Journal of Biomedical Science*, 21(1), p.39. **I.F 5.7**
 - 16) Yadav, N., [Dwivedi, A.](#), Mujtaba, S.F., Verma, A., Chaturvedi, R., Ray, R.S. and Singh, G., 2014. Photosensitized mefloquine induces ROS-mediated DNA damage and apoptosis in keratinocytes under ambient UVB and sunlight exposure. *Cell Biology and Toxicology*, 30(5), pp.253-268. **I.F 6.28**

- 17) Ray, R.S., Mujtaba, S.F., [Dwivedi, A.](#), Yadav, N., Verma, A., Kushwaha, H.N., Amar, S.K., Goel, S. and Chopra, D., **2013**. Singlet oxygen mediated DNA damage induced phototoxicity by ketoprofen resulting in mitochondrial depolarization and lysosomal destabilization. *Toxicology*, 314(2-3), pp.229-237. **I.F 3.3**
- 18) [Dwivedi, A.](#), Pal, M.K., Tripathi, A.K., Yadav, N., Mujtaba, S.F., Pant, M.C., Singh, S.K., Mishra, D.P., Ray, R.S. and Prabhu, B.M., **2013**. Role of type-II pathway in apoptotic cell death induction by photosensitized CDRI-97/78 under ambient exposure of UV-B. *Toxicology Letters*, 222(2), pp.122-131. **I.F 3.5**
- 19) Mujtaba, S.F., [Dwivedi, A.](#), Yadav, N., Ray, R.S. and Singh, G., **2013**. Singlet oxygen mediated apoptosis by anthrone involving lysosomes and mitochondria at ambient UV exposure. *Journal of Hazardous Materials*, 252, pp.258-271. **I.F 6.4**
- 20) Yadav, N., [Dwivedi, A.](#), Mujtaba, S.F., Kushwaha, H.N., Singh, S.K. and Ray, R.S., **2013**. Ambient UVA-Induced Expression of p53 and Apoptosis in Human Skin Melanoma A375 Cell Line by Quinine. *Photochemistry and Photobiology*, 89(3), pp.655-664. **I.F 2.21**
- 21) [Dwivedi, A.](#), Mujtaba, S.F., Kushwaha, H.N., Ali, D., Yadav, N., Singh, S.K. and Ray, R.S., **2012**. Photosensitizing mechanism and identification of levofloxacin photoproducts at ambient UV radiation. *Photochemistry and Photobiology*, 88(2), pp.344-355. **I.F 2.21**
- 22) Mujtaba, S.F., [Dwivedi, A.](#), Mudiam, M.K.R., Ali, D., Yadav, N. and Ray, R.S., **2011**. Production of ROS by Photosensitized Anthracene Under Sunlight and UV-R at Ambient Environmental Intensities. *Photochemistry and Photobiology*, 87(5), pp.1067-1076. **I.F 2.214**
- 23) Ali, D., Verma, A., Mujtaba, F., [Dwivedi, A.](#), Hans, R.K. and Ray, R.S., **2011**. UVB-induced apoptosis and DNA damaging potential of chrysene via reactive oxygen species in human keratinocytes. *Toxicology Letters*, 204(2-3), pp.199-207. **I.F 3.5**

Abstract Published

1. Mujtaba S.F, [Dwivedi A.](#), Daoud Ali, Hans R.K, and Ray R.S (2010). Photosensitizing mechanism and Cyp- 1A1 & 1B1 genes expression by anthracene at ambient environmental intensities; **International Symposium on Alternate Animal Models in Biological Research: Present and Future Perspectives in Toxicology**, held at Indian Institute of Toxicology Research, Lucknow.
2. Neera Yadav, Daoud Ali, A. [Dwivedi](#), R.K. Hans and R.S.Ray (2010). UVA irradiated photosensitizing potential of quinine in human skin cell line (A375) **International Symposium on Alternate Animal Models in Biological Research: Present and Future Perspectives in Toxicology**, held at Indian Institute of Toxicology Research, Lucknow.
3. Neera Yadav, [Dwivedi. A.](#), Mujtaba.S.F, and Ray R.S UV-B induced photosensitizing potential of mefloquine in human skin cell line HaCaT. **National symposium on role of ROS in plant and animal biology** (2010), Department of Biochemistry, Lucknow University, Lucknow.
4. [Dwivedi. A.](#), Syed F Mujtaba, Neera Yadav, Daoud Ali, and Ratan S Ray. Photosensitizing mechanism of levofloxacin at ambient UV radiation. **National symposium on role of ROS in plant and animal biology**, (2010) Department of Biochemistry,Lucknow university, Lucknow.
5. Syed F Mujtaba, [Dwivedi. A.](#), Neera Yadav,M.Afzal and Ratan S Ray. Singlet oxygen mediated phototoxicity of anthrone., **National symposium on role of ROS in plant and animal biology**, (2010) Department of Biochemistry, Lucknow university, Lucknow.
6. Syed Faiz Mujtaba, [Dwivedi A.](#), Yadav N., Afzal M and Ray R.S. Sunlight/UV-R induced phototoxicity and photogenotoxicity mechanism of Anthraquinone by generation of ROS. **International Symposium on Advances and Applications of Molecular Biology in Clinical Research**, (2012) Department of Biochemistry, CSMMU, Lucknow.
7. Neera Yadav, Syed F Mujtaba, [Dwivedi A](#) and R. S Ray.Genotoxic effect of quinine in human skin cell line under sunlight exposure. **International Symposium on Advances and Applications of Molecular Biology in Clinical Research** (2012), Department of

Biochemistry, CSMMU, Lucknow.

8. Deepti Chopra, Lipika Ray, Ashish Dwivedi, Syed Faiz Mujtaba, Neera Yadav, Jyoti Singh, Divya Dubey, Ajeet Srivastava, Priyanka Rathore, Dr.K.C.Gupta and R.S.Ray “Photoprotective Mechanism of Curcumin Nanoparticles under Ambient UV Radiation Exposure” **SIXTH SCIENCE CONCLAVE** – 2013 organized by IIIT-Allahabad: December 08-14, 2013.
9. Jyoti Singh, Ashish Dwivedi, Deepti Chopra, Shruti Goyal, Divya Dubey, Ajeet Kumar Srivastav and Ratan Singh Ray, “Role of Type-I and Type-II photodynamic pathways in apoptotic cell death of HaCaT cell line by photosensitized OFLOX.” **International Conference on Radiation Biology**, Nov 11-13, 2014. INMAS, DARDO, New Delhi.
10. Deepti Chopra, Ashish Dwivedi, Jyoti Singh, K.P.Singh, Rajnish K.Chaturvedi, A.B.Pant, K.C.Gupta and Ratan Singh Ray. Photoprotective efficiency of PLGA based curcumin nanoparticles versus bulk curcumin via ERK/AKT pathway under UV-R exposure in human skin keratinocytes”. **2nd International Toxicology Conclave**, CSIR-IITR, Lucknow, Nov 15-16, 2016.
11. A. Dwivedi, Ratan Singh Ray and C. Halder. Environmental UV-B irradiation attenuate the binding of ofloxacin with DNA gyrase enzyme and induced DNA damage mediated apoptosis in HaCaT cell line. **34th Annual Meeting of the Society for reproductive Biology and Comparative Endocrinology (SRBCE)** (2016) Department of Zoology, Banaras Hindu University (BHU), Varanasi.
12. Jyoti Singh, Ashish Dwivedi, Deepti Chopra, Divya Dubey, Ajeet Kumar Srivastav and Ratan Singh Ray, "Photosensitized Sparfloxacin induced attenuated antimicrobial activity and apoptosis via oxidative stress through the involvement of mitochondria under ambient UVR exposure". Jan 23-24, 2017. **ICBAFM**, Integral University, Lucknow.
13. Jyoti Singh, Ashish Dwivedi, Deepti Chopra, K.P Singh, Divya Dubey, Ajeet Kumar Srivastav, Smita Kumari and Ratan Singh Ray, "Ambient UV-B exposure attenuate the binding affinity of ofloxacin with bacterial DNA gyrase and induced apoptosis in human keratinocytes via Reactive Oxygen Species mediated pathway" **OCC-SFRR 2017**, Berlin, Germany, 23-26 June 2017. Published in Free Radical Biology and Medicine, 108, S19.
14. Sunil Kumar Patel, Lipika Ray, Ratan Singh Ray, Ashish Dwivedi, “Photoprotective efficacy of PLGA-Curcumin versus PLGA-Piperine under ambient UB and Sunlight exposure” poster presented at 19th Congress of the European Society for Photobiology (ESP 2021), Salzburg, Austria, August 30 – September 3, 2021, (Virtual Mode).
15. Sunil Kumar Patel, Diksha Pathania, Veena Jain, Somendu Kumar Roy, Ashish Dwivedi. Photoallergic mechanism of cinnamaldehyde under ambient UVR/sunlight exposure. International Congress and Expo-2022, EOAI, Indore.
16. Sunil Kumar Patel, Diksha Pathania, Veena Jain, Somendu Kumar Roy, Ashish Dwivedi. Photoallergic mechanism of cinnamaldehyde under ambient UVR/sunlight exposure. International Congress and Expo-2022, EOAI, Indore.
17. Apeksha Vikram, Madhu Bala, Gaurav Prajapati, Sachin Shukla, Aiswarya Chaudhuri, Anurag Tripathi, Ashish Kumar Agrawal, Atul Kumar Upadhyay, and Ashish Dwivedi Photoprotective efficacy of Ferulic acid (FA) loaded nanostructured lipid carriers under ambient UV-R & Sunlight. International Congress and Expo-2022, EOAI, Indore.

Invited/Oral/Poster Presentation

1. International conference on Advances in Free Radical Research, Natural Products, Antioxidants & Radioprotectors. Department of Biochemistry, CSMMU, Lucknow. Mar 19th-21st, 2009.
2. Certificate of participating in the International Symposium on Alternate Animal Models in Biological Research: Present and Future Perspectives in Toxicology, Indian Institute of Toxicology Research (CSIR-IITR), Lucknow. Oct 29th-31st, 2010.

3. Certificate of volunteer in the National symposium on role of ROS in plant and animal biology, Department of Biochemistry, Lucknow University, Lucknow. Dec 23rd-24th, 2011.
4. Certificate of attendance of the International Symposium on Advances and Applications of Molecular Biology in Clinical Research, Department of Biochemistry, CSMMU, Lucknow. Feb 21st-22nd, 2012.
5. Certificate of XXXII annual conference of the society of toxicology (STOX), India, and International symposium on new frontiers in toxicology, organized by the CSIR-Indian Institute of Toxicology Research, Lucknow. Dec 5th-7th, 2012.
6. International Symposium on Integrative Physiology & Comparative Endocrinology (ISIPCE). Department of Zoology, Banaras Hindu University (BHU), Varanasi. Feb 12th-14th, 2016.
7. 19th Congress of the European Society for Photobiology (ESP 2021), Salzburg, Austria, August 30 – September 3, 2021, (Virtual Mode).
8. International Congress and Expo-2022, EOAI, Indore, India, 25-28 May 2022.
9. Invited talk in Society of Toxicology (SOT), USA on Safety/ Allergenicity Assessment of Genetically Modified Crop. 28/01/2021.
10. Invited talk in Lucknow University on Current Trends in Food Technology and Food Processing” (CTFTFP-2021). 30/01/2021.
11. Invited Talk in workshop on “Cell culture Techniques & Cytotoxicity Analysis” on 16th Nov 2021, Lucknow University.
12. Invitation for delivering the online lecture in online training-cum-workshop on “Essential oil, Perfumery & Aromatherapy” on 10th Feb 2022.

TRAINING ATTENDED

1. Bioinformatics: Tools, Techniques and Applications” Department of Biochemistry, University of Lucknow, Lucknow. 11th-12th Feb, 2012.
2. Twenty days summer training on plant breeding techniques at crop research Centre, Mauranipur, Jhansi. Oct 1st-27th, 2004
3. Two months summer training on “RAPD analysis and culture technique”, Indian Institute of Vegetable Research, Varanasi.
4. Fifteen days training from College of Life Sciences, Cancer Hospital and research Institute, Gwalior. Jun 10th-24th, 2003
5. Post Graduate Clinic “Immunology for Clinicians” at SGPGI, Lucknow, India. Sept 16th - 17th, 2006
6. International symposium on molecular pathology” clinical application and Screening Tool” Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow, India. Feb 14th, 2011.
7. Seminar on Biostatistics in Medical Research & Practice”. CSMMU, Lucknow. Feb 18th 2012.
8. Certificate of Participation in the academic and interaction session during “the 5th science conclave/INSPIRE Internship Program” A Congregation of Nobel Laureates and Eminent, AMHRD-DST, IIT, Allahabad. Dec 08th-14th, 2012.
9. Institutional Animal handling Training, Israel Institute of Technology, Technion, Israel. 2018.
10. Institutional Animal handling Training, CSIR-IITR, Lucknow. 2020
11. Master Trainer Nominated by PM-FME, Government of India. 30 January 2021.
12. Nominated for attending the panel meeting regarding the list of permitted/ Prohibited/Restricted Ingredients for use in Fragrances in CIMAP, Lucknow on 16th March 2022.
13. 5th GLP-Inspector Training completed successfully held in New Delhi, NGCMA, 2022.

**Dr. Ashish Dwivedi,
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