Curriculum Vitae

Dr Aditya Bhushan Pant
Chief Scientist & Group Head
Systems Toxicology & Health Risk Assessment Group
Professor
Academy of Scientific and Innovative Research (AcSIR)
(An Institution of National Importance by an Act of Parliament)
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1. **Name:** Dr Aditya Bhushan Pant
2. **Date of Birth:** December 5, 1968
3. **Current Position & Address:**
   Chief Scientist & Group Head
   System Toxicology & Health Risk Assessment Group &
   Professor
   Academy of Scientific and Innovative Research (AcSIR)
   CSIR-Indian Institute of Toxicology Research
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   09935044044 (Personal)
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4. **Educational Qualification:**

MSc : Microbiology (1989)

PhD : Biotechnology (1996)*

PGDCA : Software Application (1998)

DSc : Life Sciences (Enrolled 2017)

* Work done at CSIR-Central Drug Research Institute, Lucknow, UP

***Title of Ph.D.*:** Some immunological and chemotherapeutic studies on the *in vitro* exoerythrocytic stages of rodent malaria

Title of D.Sc.: Human cord blood stem cell-derived 3D neuronal network: tool to study the developmental neurotoxicity and neuroprotection

5. Academic/ Research Experience/ Employment

Research Experience:

Sl. No.	From	To	Name of Organization	Position Hold
1.	Nov. 2023	Till date	CSIR-Indian Institute of Toxicology Research, Lucknow	Chief Scientist & Group Head
2.	Nov. 2018	Nov. 2023	CSIR-Indian Institute of Toxicology Research, Lucknow	Senior Principal Scientist & Group Head
3.	Nov. 2012	Nov. 2018	CSIR-Indian Institute of Toxicology Research, Lucknow	Principal Scientist
4.	Nov. 2008	Nov. 2012	CSIR-Indian Institute of Toxicology Research, Lucknow	Senior Scientist
5.	Nov. 2004	Nov. 2008	CSIR-Indian Institute of Toxicology Research, Lucknow	Scientist-C
6.	Nov. 2001	Nov. 2004	CSIR-Indian Institute of Toxicology Research, Lucknow	Scientist-B
7.	Nov. 1997	Nov. 2001	CSIR-Indian Institute of Toxicology Research, Lucknow	Post-Doctoral Fellow
8.	June 1995	Nov. 1996	University of Roorkee (Now IIT-Roorkee), Uttarakhand	Research Fellow
9.	June 1992	June 1995	CSIR- Central Drug Research Institute, Lucknow	Senior Research Fellow
10	Jan. 1990	June 1992	University of Roorkee (Now IIT-Roorkee), Uttarakhand	Research Fellow

Academic Experience:

1.	**Oct. 2011**	**Till date**	Academy of Scientific and Innovative Research (AcSIR)-An Institution of National Importance by an Act of Parliament, Headquarters at CSIR-HRDC Campus, Sector - 19, Kamla Nehru Nagar, Ghaziabad - 201002, U.P. Place of Teaching: CSIR-Indian Institute of Toxicology Research, Lucknow (UP)	Assistant Professor/ Associate Professor/ Professor
2.	Nov.2003	July 2006	Department of Biochemistry, Lucknow University, Lucknow, U.P.	Guest Faculty

Foreign Deputations:

Sl. No.	From	To	Place of Visit and Purpose	Position Hold
1.	November 23, 2016	December 14, 2016	Chulabhorn Research Institute, Bangkok, Thailand To attend an international training course on "Environmental Health Risk Assessment and Management of Toxic Chemicals"	Trainee delegate
2.	August 21, 2025	November 20, 2025	Heersink School of Medicine, Department of Dermatology, University of Alabama at Birmingham, USA To avail the "Short-Term ICMR-DHR International Fellowship for Senior Biomedical Scientists 2024-2025"	Visiting Senior Scientist

6. List notable contributions:

***Research excellence*:**

- Established human stem cell-based 2D and 3D models for assessing drug/chemical-induced neurotoxicity and developmental neurotoxicity
- Developed the human iPSC-derived 2D and 3D models for effective therapeutic interventions of amyotrophic lateral sclerosis, a fatal neurodegenerative disease
- Nodal Scientist (CSIR-IITR) in Aroma Mission Phase-II and Phase-III programs of CSIR, and Principal Investigator in major projects sponsored by CCRAS, Ministry of AYUSH, Government of India

COVID-19 Response:

- Instrumental in establishing CSIR-IITR's COVID-19 testing facility, reported over 4.10 lakh test results, the highest among CSIR laboratories.
- Coordinated all COVID-19-related activities, including testing, SARS-CoV-2 genome sequencing, sero-surveillance, and internal and external personnel capacity-building programs.

Regulatory Expertise:

- Lead GLP Inspector, National GLP Compliance Monitoring Authority (NGCMA), India.
- Ensured CSIR-IITR's GLP certification, a first among CSIR laboratories.
- Provided expertise to regulatory bodies like BIS, FSSAI, CDSCO, WHO, Indian Pharmacopoeia Commission, etc.
- Technical Operational Manager, Biological Sciences, NABL (ISO/IEC 17025:2017), CSIR-IITR, Lucknow.

- Comply and perform the situational analysis of chemical contaminants in food in the WHO South East Asian region (A WHO-sponsored project).
- Scientific Advisory (Only Indian) for the development of a Global Guidance Document on 'Good Cell and Tissue Culture Practice 2.0 (GCCP 2.0)' published in ALTEX 39(1), 030-070. doi:10.14573/altex.2111011.

Training, Education, and Outreach:

- Conceptualized and implemented training programs on 'Fundamentals of humane care, management, and handling of small laboratory animals used in biomedical research' for new researchers.
- Conducted outreach skill development programs to educate faculty members, research fellows, and students on stem cell research, toxicology, and biosafety.

7. Highlights of contributions in the area of specialization:

- **Development of human stem cells/ iPSC derived 2D and 3D Spheroid/ Organoid Models for Neurotoxicity/ Developmental Neurotoxicity:** Our core research is directed towards the development of human stem cell- and human induced pluripotent stem cell (iPSCs)-based in vitro 2D and 3D models to identify the critical events associated with toxic outcomes and inform species differences in toxicity, thereby predicting the human relevance of toxicity. Way back in 1997, I started and developed a new discipline of 'In Vitro Toxicology' in the country, and was the first to demonstrate the application of stem cells in the mechanistic understanding of neurotoxicology/ developmental neurotoxicity (DNT). My research revealed how master regulator signalling molecules/ cascades are critical to converting human cord blood stem cells and hiPSCs into functional neurons and glial subtypes, and what exactly happens when things go wrong during the intricate process of neural development. The research outcome provides a much-sought-after framework for understanding neurodegenerative disorders, potential therapeutic interventions, and a solid foundation for interpreting human brain-specific neurotoxicity and developmental neurotoxicity using stem cells/ iPSCs as models. Our research findings and integrated testing strategies were directly incorporated into the OECD's authoritative document on the use of non-animal methods for regulatory assessment of developmental neurotoxicity (Section 4.2.5, Page No. 119-121;ENV/JM/MONO(2017)4/ANN1).
- **Human iPSC-derived Models for Therapeutic Interventions in Amyotrophic Lateral Sclerosis:** My strategic international R&D collaboration with the Human Genome and Stem-Cell Research Centre, Institute of Biosciences, University of São Paulo, Brazil, aimed to address the challenges of Amyotrophic Lateral Sclerosis (ALS), a neglected neurodegenerative disorder, and led to the development of human iPSC-derived 2D and 3D models of the disease. This scientific collaboration provides a strong roadmap for effective drug development and therapeutic interventions for ALS, as well as synergised human resource development.
- **Cell-Free Therapy for Organophosphate Neurotoxicity:** Our studies demonstrate that the secretome, comprising signalling molecules such as extracellular vesicles (EVs) or exosomes, released by cells, is a potent cell-free therapy capable of countering the neurotoxicity induced by the organophosphate pesticide Monocrotophos (MCP). While MCP severely damages the nervous system, the secretomes from both differentiated PC12 cells and Mesenchymal Stem Cells (MSCs) have demonstrated a remarkable ability to restore neural health. It is observed that the secretome mitigates oxidative stress, regulates crucial cellular repair processes such

as autophagy (cellular cleanup) and mitochondrial dynamics (energy restoration), and actively promotes neural regeneration and differentiation. In essence, simply delivering the regenerative molecular signals, rather than the entire cells, provides a viable and powerful strategy for reversing chemical-induced damage in human neural progenitor cells.

- ***In Vitro* Model for ischemic Cerebral Stroke:** The high-throughput *in vitro* experimental model of ischemic cerebral stroke developed by us is being used to evaluate the target-specific anti-stroke potential of new drug candidate molecules.
- **Mechanistic Insights of Neurotoxicity:** A key paper defining our neurotoxicity platform in PC12 cells (*Chemical Research in Toxicology*, 23(11): 1663-1672; 2010) was named the Number One Hottest Paper of 2010 by the American Chemical Society (ACS) across all its journals, a clear benchmark of scientific authority. The fundamental importance of this paper was further highlighted when it was adopted as a core subject for final examinations in Environmental Sciences and Toxicology programs (December 16, 2010) at a leading institution, The University of North Carolina at Chapel Hill, USA. The findings were also widely recognised by scientific news agencies, underscoring the broad applicability and relevance of our advanced testing platform.
- Thirty-two of our research papers have been admitted to the "Comparative Toxicogenomics Database (CTD; http://ctdbase.org/) under "Chemical-Gene Interactions and Diseases". CTD is a NIEHS-funded public database that elucidates molecular mechanisms by which environmental chemicals affect disease. It contains chemical-gene-disease interactions curated from the scientific literature. http://ctdbase.org/basicQuery.go;jsessionid=E489DAA8C3A864F061BB0F2C6E9C9BDD?bqCat=reference&bq=Pant+AB
- During the COVID-19 pandemic, I established a state-of-the-art testing facility at CSIR-IITR, coordinated testing, genome sequencing, and capacity-building programs, and reported over 4.25 lacs test results, the highest by any CSIR laboratory.
- I served as a subject expert (Stem Cells and Regenerative Medicine) in the panel constituted by the Central Drugs Standard Control Organization, Office of Drug Controller General India, Ministry of Health and Family Welfare, Government of India, to review the Drugs and Cosmetics Act comprehensively 1940, and Rules made thereunder, and to bring out the new legislation and rules. On the panel's recommendations, Schedule 'Y' was replaced with the New Drugs and Clinical Trials Rules 2019.
- As a GLP Inspector of the National GLP Compliance Monitoring Authority (NGCMA), Government of India, since 2010, I have utilised my expertise to monitor the adequate implementation of the OECD Principles of GLP in GLP-certified Test Facilities and evaluate the suitability of test facilities seeking GLP certification across the country. Under my guidance, CSIR-IITR, Lucknow, achieved the distinction of being the first GLP-certified laboratory in the entire CSIR and the third in the Government Sector.
- Acted as a Scientific Advisor (Only Indian) for the development of a Global Guidance Document on 'Good Cell and Tissue Culture Practice 2.0 (GCCP 2.0)' published in ALTEX 39(1), 030-070. doi:10.14573/altex.2111011.
- I served as an international advisor for the WHO-funded Africa Centre of Excellence in Materials, Product Development, and Nanotechnology in Uganda.

- Complied and performed the situational analysis of chemical contaminants in food in the WHO South East Asian region (eleven countries). A WHO-sponsored project and report is with WHO for final publication.
- Serves as a subject expert in the various committees of accreditation/ regulatory agencies-BIS, NGCMA, DCGI, FSSAI, ICMR, DST, CDSCO, Indian Pharmacopoeia Commission, and inter-ministerial committee for Medicinal and Aromatic Plants (MAPs) for the north-eastern region, RC-GM, DBT, International Institute of Life Sciences (Scientific Advisor), etc.
- Conceptualized and implemented the one-week orientation training program on 'Fundamentals of humane care, management and handling of small laboratory animals used in biomedical research' for new researchers. This program is now implemented as a personnel training and qualification policy, which requires training for all animal users to ensure that they are qualified to work with and handle experimental animals.
- I served as a member of the draft committee to develop 'SOP on Patients Consent in India-2018', by the Institute of Medicine & Law (IML), Mumbai. (http://www.patientsconsent.com/Associates.aspx).
- Developed a dynamic "**Online Human Health Risk Assessment System**" for the online real-time assessment of potential health risks and possible remedial suggestions for the Indian population (http://healthriskindia.in).
- Developed the "**biocalculators**" for rapid and accurate calculations of various biological endpoints (Copyright No. 013/CR/2006/ 748854).
- As a leader in knowledge dissemination, I actively bridge the gap between cutting-edge research and the scientific community. This commitment is evidenced by 300+ invited lectures delivered over 25 years to empower faculty, research fellows, and students with recent updates in stem cell research, toxicology, and regulatory (GLP) compliance. This consistent outreach strengthens the nation's scientific capacity and ensures research insights transition effectively to public knowledge.
- Since its inception, I have been associated with AcSIR in designing the course curriculum and as an active teaching faculty. I am a course coordinator for courses: 'Stem Cells, Regeneration, and Aging'; 'Xenobiotic Interaction and Responses'; 'Interdisciplinary/ Cross-disciplinary-GLP, NABL, Animal Handling, Analytical Tools and Instrumentation, Risk Assessment, Biosafety, Entrepreneurship', and also teaching the courses: Research Methodologies, Ethics and Safety and Target and Non-Target Organ Toxicity.

8. Translational Impact and National Leadership

My research and regulatory contributions have demonstrated a profound and measurable impact, transitioning from fundamental laboratory discoveries to national policy and a global scientific position, thereby bridging the gap between laboratory work and real-world applications.

Advancing Human Health & Safety

- The establishment of human stem cell-based 2D and 3D models for neurotoxicity and developmental neurotoxicity provided ethical, human-relevant alternatives, with the findings being incorporated into an OECD authoritative document, thus informing global regulatory standards.
- The development of human iPSC-derived models for ALS offers a strategic research pipeline

for therapeutic drug candidates against this fatal neurodegenerative disorder.

- A breakthrough in regenerative medicine was achieved with the discovery of Cell-Free Therapy (secretome/exosomes) to counter organophosphate neurotoxicity, pioneering a powerful strategy for neural damage repair.
- On the public health front, the instrumental role in establishing and coordinating the CSIR-IITR COVID-19 testing facility provided critical, high-volume support to the national emergency response, reporting over 4.10 Lakh test results, the highest among all CSIR laboratories.

Shaping Policy and Elevating National Prestige

- The research has directly shaped national policy. Expertise provided to the Central Drugs Standard Control Organisation (CDSCO) was instrumental in modernising the regulatory framework, resulting in the replacement of Schedule 'Y' with the New Drugs and Clinical Trials Rules 2019, which now incorporates 2D and 3D *in vitro* model systems for drug screening. This achievement elevated India's scientific image by ensuring compliance with global standards.
- This is further reinforced by securing CSIR-IITR's GLP Certification (the first among CSIR laboratories) and my role as a Lead GLP Inspector for the NGCMA.
- Secured a place for India in global scientific discussions by acting as the only Indian Scientific Advisor for the Global Guidance Document on GCCP 2.0.
- A key paper defining the neurotoxicity platform was named the Number One Hottest Paper of 2010 by the American Chemical Society (ACS), which established a significant scientific benchmark for the institute.
- The commitment to scientific governance is demonstrated by the successful implementation of mandatory orientation training on humane animal care, which raised ethical and quality standards across the institute.
- Delivered over 300 invited lectures to scientists, faculty, and students on contemporary scientific and regulatory issues. It has played a critical role in developing skilled human resources and amplifying knowledge across the scientific community.

9. Honours/ Awards/ Recognitions

(a) ***Awards:***

Sl. No.	Name of Award	Name of the awarding body	Year
1.	Vigyan Ratna Award-2010	Council of Science & Technology UP, Government of Uttar Pradesh, Lucknow, UP	2010
2.	STOX/ ASAW Gold Medal	Society of Toxicology, India	2011
3.	Shakuntala Amir Chand Prize-2007	Indian Council of Medical Research, Government of India, New Delhi, India	2011

4.	National Bioscience Award for Career Development-2012	Department of Biotechnology, Ministry of Science & Technology, Government of India	2013
5.	AEB Gold Medal-2013 for Meritorious Service-2013	Academy of Environmental Biology, India	2013
6.	Fellowship to attend an international training course on "Environmental Health Risk Assessment and Management of Toxic Chemicals"	Chulabhorn Research Institute, Bangkok, Thailand	2016
7.	Prof. KT Shetty Memorial Oration Award-2017	Indian Academy of Neurosciences, India	2017
8.	Toxicology Promotion Award -2018	National Academy of Sciences, Allahabad, India	2018
9.	UK Registered Toxicologist Award (UK-RT)	Royal Society of Toxicology and British Toxicology Society, London	2019
10.	European Registered Toxicologist (ERT) Award	Federation of European Toxicologists & European Societies of Toxicology	2019
11.	D.Sc. (*Honoris Causa*)	H.N.B. Uttarakhand Medical Education University, Dehradun, Uttarakhand, India	2021
12.	ICMR-DHR International Fellowship for Senior Biomedical Scientists 2024-2025 To conduct collaborative research at the Heersink School of Medicine, Department of Dermatology, University of Alabama at Birmingham, USA	Indian Council of Medical Research, Department of Health Research, Ministry of Health & Family Welfare, Government of India	2025

(b) ***Honours/ Recognitions:***

- **Fellow:** Academy of Toxicological Sciences, USA
- **Fellow:** Society of Toxicology, India
- **Fellow**: Academy of Sciences for Animal Welfare, MoEF, Government of India
- **Fellow:** Academy of Environmental Biology
- **Fellow:** Indian Academy of Neurosciences
- **Member:** Society of Quality Assurance, USA
- **Member:** Royal Society of Biology, London, UK
- **Member:** Federation of European Toxicologists & European Societies of Toxicology
- **Member**: National Academy of Sciences, India

- **Member**: National Academy of Medical Sciences, India
- **Member:** International Society for Stem Cell Research (ISSCR), USA
- **Member:** Society of Toxicology, USA
- **Member:** International Neurochemistry Society, USA
- **Member:** European Society of Toxicology In Vitro
- **Member:** Society for Alternatives to Animal Experiments-India
- **Member:** Academy of Environmental Biology India
- **Member:** Indian Academy of Neurosciences
- **Member:** Indian Neurochemistry Society
- **Member:** Laboratory Animal Scientist's Association, India
- **Member:** Environmental Mutagen Society, India
- **Member:** Indian Pharmacology Society
- **Member:** Indian Society for Parasitology
- **Member:** UP Association for Science & Technology Advancement, India
- **Member**: Red Cross Society, Indian Chapter
- **Member**: St. John Ambulance Association, Indian Chapter

(c) Editorial Assignments:

- **Editorial Member:** Scientific Report (December 2014- till date)
- **Academic Editor:** PLoS ONE (January 2012- September 2018)
- **Advisory Member:** Toxicology Research (January 2012-December 2018)
- **Managing Editor:** Toxicology International (January 2010- November 2014)
- **Associate Editor:** Annals of Neurosciences (January 2015-till date)

Editorial Advisory Board Members: Biotechnology Kiosk (May 2019- till date)

10. Professional Affiliations:

- **Lead GLP Inspector:** National GLP Compliance Monitoring Authority (NGCMA) of India, Department of Science & Technology, Ministry of Science & Technology, Government of India.
- **In-charge GLP Test Facility:** I served as Test Facility Management-II to coordinate the entire GLP-related activities at CSIR-IITR, Lucknow. I was also instrumental in the GLP certification of CSIR-IITR, Lucknow, in 2014. Additionally, I have been providing expert guidance and training to the personnel involved in the GLP Toxicity Facility at CSIR-IITR, Lucknow.
- **National GLP Trainer:** I have been serving as a GLP trainer for the National GLP Compliance Monitoring Authority, Ministry of Science & Technology, Government of India, to train professionals working in Contract Research Organisations and Pharmaceutical and Biotechnology companies involved in pre-clinical regulatory studies.

- **Member & Subject Expert:** Committee constituted by the Secretary, DST, Government of India, for the review of working documents of the National GLP Compliance Monitoring Authority of India
- **Member & Subject Expert:** Sub-committee constituted by the Secretary, DST, Government of India, for the preparation of a guidance document for GLP certification scope of National GLP Compliance Monitoring Authority of India.
- **Member & Subject Expert:** National Review Committee for Plastic and Polymeric Products (PCD-12 and 21), Cosmetic Sectional Committee (PCD 19) and Panel-2 of PCD 18 of the Fragrance and Flavour Sectional Committee of the Bureau of Indian Standards (BIS). Recently revised documents with my intellectual inputs as a member of the BIS (PCD-21) are (IS 8747: 2025; IS 9738: 2025; IS 14537: 2025; IS 14764: 2025; IS 15410: 2025)
- **Technical Operational Manager and Authorised Signatory for Plastic & Polymeric Studies:** National Accreditation Board for Testing and Calibration Laboratories (NABL) activities at CSIR-IITR, Lucknow, to ensure the compliance of 'Laboratory Quality Management System and Internal Audit' as per IS/ISO/IEC 17025:2017 and ISO/IEC 17025:2005, ISO 15189:2007 Standards.
- **Subject Expert Member:** Food Safety Risk Assessment Committee at Food Safety and Standards Authority of India, New Delhi (2024-till date)
- **Subject Expert Member**: Scientific Panel on "Antimicrobial Residues" at Food Safety and Standards Authority of India, Delhi (2018-2022)
- **Subject Expert Member**: Cosmetics Expert Committee at Central Drugs Standard Control Organisation, Ministry of Health and Family Welfare, Government of India (2024-till date)
- **Subject Expert Member**: Committee to prepare an SOP/ Guidelines regarding Environmental Management for ASU drug industries engaged in the manufacturing of Mercury-based medicines at the Ministry of AYUSH, Government of India (2024-till date)
- **Subject Expert Member**: The expert committee for preparation of frequently asked questions on induced pluripotent stem cells (iPSCs) and additional testing methods, such as those other than animal testing, to investigate the safety and efficacy of a new drug or investigational new drug at the Central Drugs Standard Control Organisation, Government of India (2024-till date)
- **Member:** Research Advisory Committee of the Analytical Sciences Division-Bio (ASD-Bio), Shriram Institute for Industrial Research, Delhi (2025-till date)
- **Nodal Scientist:** At CSIR-Indian Institute of Toxicology Research (CSIR-IITR), Lucknow, for Aroma Mission Phase-III programs of Council of Scientific and Industrial Research (CSIR), Ministry of Science & Technology, Government of India, Delhi, and Principal Investigator in 4 major projects sponsored by CCRAS, Ministry of AYUSH, Government of India
- **Subject Expert:** In 2016, the Government of India decided to comprehensively review the Drugs and Cosmetics Act. 1940 and the Rules made thereunder, and to bring out the new legislation and rules. In this regard, the Central Drugs Standard Control Organisation, Office of the Drug Controller General of India, Ministry of Health and Family Welfare, Government of India, has constituted a panel of experts. I served in the committee as a subject expert for "**Stem Cells and Regenerative Medicine**".
- **Nodal Scientist-COVID-19 Testing Facility:** As the Nodal Scientist for the COVID-19 Testing Facility at CSIR-IITR, I established and coordinated all related activities, including

testing, genome sequencing, sero-surveillance, and capacity building. Under my leadership, the facility reported over 4.10 lakh test results, the highest total among all CSIR laboratories.

- **Member:** I was a committee member for the development of the 'SOP on Patient's Consent in India-2018,' an initiative by The Institute of Medicine & Law (IML), Mumbai. This SOP holds unique global significance as it was the first time in the world that a team of experts collaboratively and voluntarily drafted a standard operating procedure on patient consent, providing much-needed clarity on current uncertainties (http://www.patientsconsent.com/Associates.aspx)
- **International Advisor:** As an international advisor, I provided my intellectual and strategic inputs in establishing the WHO-funded "Centre of Excellence for Nanotechnology" at Makerere University, Uganda.
- **Member: '**Review Committee on Genetic Manipulation' constituted by DBT, Delhi, as per the Gazette notification of the Ministry of Environment, Forest and Climate Change (MoEFCC) under the Environment (Protection) Act 1986 (2023- till date)
- **Honorary e-consultant**: Toxicology and Forensic Sciences through www.indmedica.com
- **Member:** Taskforce of DBT monitoring committee for a mega project on the creation of a "Small Animal Research Facility for Preclinical Studies and Services" at SVB Mahatma Gandhi Medical College and Research Institute, Puducherry. (2016-2019)
- **Subject Expert:** Inter-Ministerial Committee for Medicinal and Aromatic Plants (MAPs) for North Eastern Region (2019-2022)
- **Chairman:** Institutional Committee for Research Ethics at HNB Uttarakhand Medical Education University, Dehradun (2018-2023)
- **Member:** Institutional Committee for Stem Cell Research at King George's Medical University, Lucknow (2019-2022)
- **Member:** Institutional Committee for Stem Cell Research, at SGPGIMS, Lucknow (2019-2022)
- **Member:** Institutional Committee for Stem Cell Research at Era University, Lucknow (2019-2021)
- **Member:** Advisory Committee of 'Environmental Sciences', and 'Biotechnology' for evaluation of research projects submitted for possible funding at Council of Science & Technology, Uttar Pradesh (2016-till date)
- **Member:** Board of Studies "Environmental Sciences" Dr Ram Manohar Lohia Awadh University, Faizabad (2015-till date)
- **Member:** Board of Studies "Biotechnology" Institute of Engineering & Technology, Lucknow, Uttar Pradesh (2016-till date)
- **Member:** Institutional Animal Ethics Committee, Baba Bhimrao Ambedkar University, Lucknow, Uttar Pradesh (2016-2019)
- **DBT Nominee:** Institutional Biosafety Committee, Baba Bhimrao Ambedkar University, Lucknow, Uttar Pradesh (2019- till date)
- **Member:** Institutional Ethics Committee, Baba Bhimrao Ambedkar University, Lucknow, Uttar Pradesh (2019- till date)

- **External Expert:** Advisory Board of Era University, Lucknow (2018-till date).
- **Member Secretary:** Institutional Biosafety Committee, CSIR-Indian Institute of Toxicology Research, Lucknow (UP) (2018-2021)
- **Chairman:** Institutional Biosafety Committee, CSIR-Indian Institute of Toxicology Research, Lucknow (UP) (2021-2025)
- **Joint Secretary:** Society for Alternatives to Animal Experiments-India (2019- till date)
- **Secretary General:** Society of Toxicology, India (2012-2014)
- **Member:** Biosafety Committee, Aligarh Muslim University, Aligarh. (Since 2009- 2012)
- **Member:** Research Council, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow (UP) (2009-2012)
- **Chairman:** 'Institutional Committee for Stem Cell Research' at Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow (UP) (2009-2012)
- **Member:** Selection Committees of more than ten Universities in India (2010-till date).
- **Member:** Microphysiology System (MPS) World Summit Scientific Advisory Committee, Johns Hopkins Bloomberg School of Public Health, Centre for Alternatives to Animal Testing, Baltimore, USA (2022-2023)
- **Subject Expert:** I have been working as a subject expert in the various accreditation agencies-BIS, NGCMA, CDSCO, FSSAI, Indian Pharmacopoeia Commission and inter-ministerial Committee for Medicinal and Aromatic Plants (MAPs) for the northeastern region, etc.
- **Chairman:** The institutional committee for Stem Cell Research at Dabur Research Foundation, Ghaziabad, Uttar Pradesh (2023- till date)
- **Member:** Board of Studies at NIPER, Hyderabad (2022- 2025)
- **Member:** Advisory committee for the development of the 'Pre-clinical Research and Development Centre' at CSIR-Indian Institute of Chemical Biology, Kolkata (2024-till date)
- **Member:** Research Committee at Sanjay Gandhi Post-Graduate Institute of Medical Sciences, Lucknow (2022-till date)
- **Member:** Scientific Advisory Committee, ICMR-National Institute of Nutrition, Hyderabad (2023-till date).
- **Member:** Institutional Human Ethics Committee, CSIR-Indian Institute of Toxicology Research, Lucknow (2024-till date)
- **Member,** Assessment committee for the promotion of Scientists at the Central Council for Research in Ayurvedic Sciences, Ministry of AYUSH, Government of India (2023-2024)
- **Member,** Scientific Advisory Board of International Institute of Life Sciences, India (2023-till date)
- **Member:** Institutional Ethics Committee Meeting, Dabur Research Foundation (2024-till date)
- **Member**: Institutional Biosafety Committee at KGMU, Lucknow (2025-till date)
- **Member:** Institutional Committee for Human Ethics, GSV Medical College, Kanpur (2024-till date)

11. Publications:

- **Research Publications:** 183
- **Books:** 10
- **Book Chapters:** 23
- **Patents/ Copyrights:** 5
- **Invited Talks Delivered in Symposia/ Conferences:** 300+

(a) *List of research publications:*

Total Citations: 8474

H Index: **49**

i10-index: **154**

PubMed Link: https://pubmed.ncbi.nlm.nih.gov/?term=Pant+AB&sort=date

Web page: http://iitrindia.org/En/StaffDetail.aspx?id=105

1. G Siddiqui, **AB Pant**, CD Mohan (2026). The multifaceted antineoplastic effects of arenobufagin against human cancers. ***Biomedicine & Pharmacotherapy***.2026;195:119062
2. S Sarkar, A Pandey, B Khan and **AB Pant** (2025). Integrative assessment of RNA sequencing and *in silico* analysis to pinpoint mRNAs, lncRNAs, and circRNAs interactions with miRNAs underlying arsenic-induced neurotoxicity. ***BMC Genomics.*** (2025) 25;26(1):813. **[Impact Factor = 4.2]**
3. P Vatsa, A Srivastava, AK Srivastava, A Pandeya, A Singh, **AB Pant** (2025). Mesenchymal stem cell secretome restores monocrotophos-induced toxicity in human neural progenitor cells. ***Biochemical and Biophysical Research Communications.*** 2025; 8:769:151987. **[Impact Factor = 2.2]**
4. UA Ansari, A Srivastava, AK Srivastava, A Pandeya, P Vatsa, R Negi, A Singh and **AB Pant** (2025). Targeting TDP-43 proteinopathy in hiPSC-derived mutated hNPCs with mitoxantrone drugs and miRNAs. ***Pharmaceutics*** 2025:17; 410. **[Impact Factor: 5.5]**
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10. **AB Pant** (2026). भारत में विष विज्ञान का विकास. Published by CSIR - National Institute of Science Communication and Policy Research, Council of Scientific & Industrial Research, Ministry of Science & Technology, Government of India (In Press)

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2. VK Khanna, **AB Pant** and S Saxena (2007). Oxidative stress in macular disorder: strategies for management. A chapter in a book entitled "Recent developments in ocular disorders". Published by Jaypee Press, New Delhi, 2007.
3. I Ahmad, MSA Khan, M Zahin, M Owais, Z Mehmood and **AB Pant** (2010). Combinational antifungal therapy and recent trends in drug discovery. Chapter in book entitled "Combating fungal infections: problems and remedies". eBook ISBN 978-3-642-12173-9; Hardcover ISBN 978-3-642-12172-2. Springer-Verlag Berlin Heidelberg, 2010.
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5. **AB Pant** and VK Khanna (2012). Alternatives to the experimental animals in biomedical research and testing. Chapter in book entitled "Use of animals in scientific research and education". Indian National Science Academy, New Delhi, 2012.
6. **AB Pant**. (2012) Status of toxicology in India. Book Published by Amity University, Lucknow, 2012.
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15. Puneet Khare and **AB Pant** (2022). Excessive use of *trans* fatty acids: A cause of big trouble. A chapter published in Vish Vigyan Sandesh, a Hindi magazine published by CSIR-IITR, Lucknow, India. Print: ISSN 0972-1746 (Vol. 37, April-Sept, 2022-23)

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18. A Srivastava, AK Srivastava, and **AB Pant** (2024). Strategic developments for pre-clinical safety/ efficacy studies of haircare products. A chapter published in the book "Hair Care Products - Efficacy, Safety, and Global Regulation". Published by Springer Nature ISBN: 9819767393, 9789819767397.

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20. Meenu Srivastava and **AB Pant** (2025). Environmental Stressors-Mediated Apoptosis & Autophagy Detected Through Flow Cytometry. A chapter in the book "Flow Cytometry: Applications in Cellular and Molecular Toxicology". Published by Springer Nature. ISBN 978-981-97-9757-8, 981-97-9757-5.

21. Abhishek Pandeya and **AB Pant** (2025). Application of Flow Cytometry in Elucidating the Intricate Mechanism of Neurotoxicity. A chapter in the book "Flow Cytometry: Applications in Cellular and Molecular Toxicology". Published by Springer Nature. ISBN 978-981-97-9757-8, 981-97-9757-5.

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23. **AB Pant** (2026). Regulatory insights and recommendations for essential oils and fragrances in cosmetics: The key takeaways. A book chapter in the book "Essential Oils and Fragrances in Cosmetics". Published by CRC Press- Taylor and Francis Books, USA (In Press).

(d) *Patents filed and granted:*

1. Copyright granted for the development of "**Bio-calculators**" for the rapid and precise calculations of biological and statistical endpoints (No. 013/CR/2006/748854). These bio-calculators, along with a database management system for 'human health risk assessment and management', are available on a dedicated website (www.healthrisk.co.in).
2. A design patent/ certificate granted for 'Sustained aerosol exposure equipment design for evaluation of preclinical inhalation toxicity' (Co-Inventor): Design certificate number 419028-001 dated June 4, 2024.
3. An Indian Patent has been granted, entitled "Biocompatible Alkyl-Bisbiguanide Nanoparticles as Intracanal Medicament for Prolonged Antimicrobial Substantivity in Endodontic Therapy" (Co-Inventor): Application No.202511099665 A: The Patent Office Journal No. 49/2025: Dated 05/12/2025.
4. An Indian patent has been filed entitled 'Sunscreen Composition' (Co-Inventor): Application No. 202411072661: Reference No. TEMP/E-1/83972/2024-DEL (Filing date: September 25, 2024)
5. An Indian patent has been filed entitled 'Conversion of Ferulic Acid into Caffeic Acid under UV-A exposure' (Co-Inventor): Application No. 202511008084: Reference No. TEMP/E-1/7069/2025-DEL (Application filing date: January 30, 2025)

12. Major R&D projects/programs implemented:

Project Title	Funding Agency	Amount (Rs. In Lacs)	Period
Extramural projects as Principal Investigator			
In vitro model for evaluation of medical devices for biological hazards.	ICMR, Delhi	5.00	Jan. 2000-Jan. 2003
Neuro-genotoxicity assessment of co-exposure of lead and ethanol: an *in vitro* study	ICMR, Delhi	6.50	May 2005-May 2008
Development of *in vitro* models of cerebral stroke to evaluate the neuroprotective effects of herbal drugs	ICMR, Delhi	18.00	July 2006-July 2009
Studies on the expression and regulation of xenobiotic metabolizing cytochrome P450s in human brain cells	CST-UP, Lucknow	5.50	July 2007-July 2010
Therapeutic interventions in oral sub-mucous fibrosis: an experimental study	ICMR, Delhi	20.00	May 2009-May 2012
Development of monoclonal antibody-based ELISA/ Dipstick kits for GM food and crops	DBT, Delhi	53.00	Oct. 2008-Oct. 2011
Functional neuronal differentiation of human cord blood stem cells: tool to study the chemical-induced developmental neurotoxicity	DBT, Delhi	54.00	Nov. 2010-Oct. 2013

Functional characterisation of brain cytochrome P450s in differentiating neuronal and glial cells derived from human umbilical cord blood stem cells	DST, Delhi	65.00	May 2012-May 2015
Dissecting the signaling cascade involved in *trans*-resveratrol-induced neuronal differentiation in PC12 cells: implications in neurodegenerative disorders **(Project under National Bioscience Award for Career Development-2012)**	DBT, Delhi	9.00	Aug.2013-Aug. 2016
Application of human iPSCs in deciphering the cellular and molecular mechanisms of amyotrophic lateral sclerosis and disease association with developmental neurotoxicity	Indo-Brazil DBT, Delhi	168.00	June 2016-May2020
Application of human iPSCs-derived 3D neuronal niche: A high-throughput system to screen the developmental neurotoxicity potential of chemicals/ drugs	SERB, Delhi	54.00	Dec.2018-March 2022
Rapid and economical diagnosis of SARS-CoV-2 infection in human nasal and pharyngeal samples	UP Govt., U.P.	100.00	April 2021-March 2022
Deciphering the cellular and molecular mechanisms of non-cell-autonomous developmental neurotoxicity in human iPSC-derived model of Amyotrophic Lateral Sclerosis	ICMR, Delhi	139.21	September 2022-August 2025
Toxicity Profile of Rasamanikya Rasa in Experimental Animals	CCRAS, Delhi	87.70	April 2023-March 2026
Toxicity Profile of Tribhuvana Kirti Rasa in Experimental Animals	CCRAS, Delhi	112.26	April 2023-March 2026
Toxicity profiling of Swaskuthar Rasa in Experimental animals	CCRAS, Delhi	102.61	April 2023-March 2026
Toxicity profiling of Mrutyunjaya Rasa in Experimental animals	CCRAS, Delhi	103.96	April 2023-March 2026
Designing a novel miRNA-based antisense oligonucleotide targeted therapy for Amyotrophic Lateral Sclerosis	ICMR, Delhi	233.35	Dec.2025-Nov.2028
Value addition to Agarwood oil-based cosmetic, personal care, and food products by substantiating the pre-licensing regulatory safety/ toxicity studies	World Bank through the Government of Tripura	825.6	Under review
Extramural projects as Co-Principal Investigator			

Clinical trial with RISUG: genotoxicity and mutagenicity studies	ICMR, Delhi	8.00	April 2005-March 2006
Cytokine profile in Eales' disease: relationship with disease activity	KGMU, Lucknow	1.00	April 2005-March 2006
Flow Cytometric analysis of DNA ploidy and cell cycle in buccal mucosal cells in smokeless tobacco consumers	ICMR, Delhi	26.00	March 2006-Feb. 2009
Cytochrome P450s (P450s) in cultured rat brain cells: cell specific inducibility and vulnerability to environmental chemicals	CST-UP, Lucknow	5.40	Oct.2004-Sept.2007
Potential of black tea and its constituents in reversal of multidrug resistance and as a bio-enhancer in cancer chemoprevention	DBT, Delhi	52.00	Nov.2005-Nov.2008
To study the genetic stability of bacterial strain from the earthworm gut *in situ* application in the detoxification of endosulfan	CST-UP, Lucknow	5.40	Aug.2006-Aug. 2009
Neurotoxicity of synthetic pyrethroid (Lambda-cyhalothrin) pesticide: behavioural, neurochemical, and immunohistochemical studies in developing and young rats	ICMR, Delhi	20.00	April 2007-March 2010
Development of ELISA & PCR-based tests for GM Crops & Food	DBT, Delhi	56.00	August 2007-July 2010
Role of microRNAs in neuronal differentiation and regulation of their expression by known developmental neurotoxins	DBT, Delhi	17.00	May 2009-May 2012
Identification and validation of early biomarkers for predicting toxicity, including pre-carcinogenic leasons in individuals occupationally exposed to PAHs and through tobacco	Indo-US ICMR, Delhi	60.00	May 2012-May 2015
Prenatal viral infection: neuroimmunological, molecular and cognitive consequences during development, adulthood and senility in mice	ICMR, Delhi	60.00	May 2013-May 2016
Understanding the role of Mitochondrial Proteostasis and Unfolded Protein Response (UPRmt) in Maintenance of Stemness or Neuronal Differentiation in Alzheimer's disease	ICMR, Delhi	68.82	May 2023-May 2026
Dissecting molecular insights of early life oral exposure of Xenoestrogen Bisphenol-A on Choroid Plexus and Cerebrospinal Fluid (ChP-CSF) System in the Brain: Implications on Neurogenesis	ICMR, Delhi	109.42	May 2025-April 2028

Intramural projects as Principal Investigator (CSIR Funding)			
Establishment and validation of primary cultures of brain cells as *in vitro* model for neurotoxicity	CSIR (CMM-0018)	25.00	April 2002-March 2007
Establishment and validation of *in vitro* model system for cytotoxicity assessment	CSIR (CMM-0018)	10.00	April 2002-March 2007
Stem cells: *in vitro* tool to understand the mechanisms of pesticide-induced developmental neurotoxicity	CSIR (NWP-34)	40.00	April 2007-March 2012
Development and validation of *in vitro* models of developmental neurotoxicity	CSIR (SIP-08)	50.00	April 2007-March 2012
Stem cell derived skin dendritic cells: an in vitro tool to assess the immune-toxicity of environmental contaminants	CSIR (NWP-17)	30.00	April 2007-March 2012
Development and validation of *in vitro* models for cytotoxicity, neurotoxicity and metabolism assessment	CSIR (NWP-34)	10.00	April 2007-March 2012
Secretome based stage-specific markers of developmental neurotoxicity in hematopoietic stem cell-derived differentiating neuronal	CSIR (BSC-0111)	25.00	April 2012-March 2017
Molecular imprinting of genes associated with neural development, injury and repair in differentiating neural cells derived from human umbilical cord blood stem cells	CSIR (BSC-0111)	25.00	April 2012-March 2017
In vitro model of ischemic cerebral stroke: applicability of human neuronal cells derived from umbilical cord blood stem cells	CSIR (BSC-0103)	40.00	April 2012-March 2017
Secretome-mediated responses on the neuronal differentiation of human iPSCs and neuro-restoration against toxic insult	CSIR (MLP-05)	40.00	April 2017-March 2021
Detection of SARS-CoV-2 in human nasal and pharyngeal samples by Real Time-PCR method	CSIR (MLP-12)	195.00	May 2020-March 2021
Andrographis-based therapy to suppress the severity of the COVID-19 infection by targeting host pathogenic mechanisms	CSIR (MLP-10)	42.92	January 2021-March 2022
MicroRNAs as Potential Therapeutic Intervention in Amyotrophic Lateral Sclerosis (TALK)	CSIR (OLP-017)	25.00	April 2023 - March 2025
Value Addition in Castor: Product, Process, and Sensor Development	CSIR (HCP-512401)	385.64	April 2024 - March 2026

Democratizing Research on Human-iPSCs for Toxicity Studies and Disease Modeling in India [DREAM]	CSIR (OLP-38)	40.00	April 2025 - March 2027
Value addition in castor: product, process and sensor development (Project Leader: WP-2.3)	CSIR-HCP512401	575.88	April 2024-March 2026
Development of human stem cell-derived nano-engineered exosomes for targeted miRNA-delivery in Parkinson's therapeutics	CSIR-FIRST (Round-4)	99.22	Under review
Biobanking Resources for Innovation in Disease Research and Experimental Models (BRIDGE)	CSIR, New Delhi	1460.07	Submitted
Intramural projects as Co-Principal Investigator (CSIR Funding)			
Exploring the mechanism of skin sensitization and allergic response induced by fragrances in cosmetics exposed to ambient UV radiation and sunlight, along with associated alterations in skin microbes	CSIR (OLP-20)	145.50	April 2024-March 2026
Smoke exposure device for rodent single and multiple dose inhalation experiment	CSIR (OLP-28)	15.00	April 2024-March 2026
Deciphering the chimeric RNA expression dynamics in neural progenitor cells upon lead exposure at different concentrations and time points using in silico and experimental approaches.	CSIR (OLP-32)	9.00	April 2025-March 2027
Nodal Scientist (CSIR-IITR, Lucknow)-National Mission Programs			
Pre-clinical regulatory toxicity/ safety studies of oils/ aroma chemicals/aroma-based products developed/ to be developed under 'Aroma Mission Phase-II	CSIR-Aroma Mission Phase-II	350.00	December 2020-March 2022
Safety/ toxicity of essential oils and oil-based products	CSIR-Aroma Mission Phase-III	268.23	April 2023 - March 2026

Industry-Sponsored and Regulatory Projects:

In addition to my core R&D initiatives, I have served as Principal Investigator (PI), coordinating numerous regulatory and commercial studies that generate external revenue for the organisation.

This work includes:

- **GLP-Compliant Pre-Clinical Regulatory Studies:** These projects are funded by a diverse portfolio of external clients, including government agencies, industries, and public sector organisations, ensuring compliance with the strict Good Laboratory Practice (GLP) standards.

- **Non-GLP Consultancy and Testing Projects:** I also oversee specialised testing and consultancy work for non-governmental organisations (NGOs) and other clients, contributing directly to the organisation's financial strength and external cash flow.

In this capacity, I ensure the smooth execution of externally funded projects, ranging from strict regulatory trials to direct commercial testing.

13. Academic Leadership and Teaching at AcSIR:

Since the inception of the Academy of Scientific and Innovative Research (AcSIR), I've been actively involved in shaping its academic direction, contributing to course curriculum design and serving as a key teaching faculty member.

Presently, I hold the title of Professor at AcSIR, where my responsibilities include:

- **Course Coordination and Teaching:** I serve as the Course Coordinator for several specialized topics, including:
  - Stem Cells, Regeneration, and Ageing
  - Xenobiotic Interaction and Responses
  - Interdisciplinary/Cross-disciplinary Studies (covering GLP, NABL, Animal Handling, Analytical Tools and Instrumentation, Risk Assessment, Biosafety, and Entrepreneurship)
- **Core Teaching:** I also teach essential subjects crucial for doctoral research:
  - Research Methodologies
  - Ethics and Safety
  - Target and Non-Target Organ Toxicity

In addition to my professorial and teaching duties, I actively support the next generation of researchers by participating in the Doctoral Advisory Committees (DACs) of numerous PhD Fellows and serving on selection and assessment committees for both PhD program admission and specific research projects within AcSIR.

Human resources developed:

(a) PhD Supervisor: Awarded: 35; Currently enrolled: 6

(b) Post-Graduation: M.Sc.: 164; MDS: 44; M.Tech.: 28; B.Tech.: 12

(c) Post-Doctoral Fellows: Guided: 10; Presently working: 4

(d) Project Fellows (presently working): 16

Date: October 9, 2025
Place: Lucknow, India

AB Pant