

POOJA YADAV

ASSISTANT PROFESSOR

EDUCATION

Doctor of Philosophy

DST-INSPIRE Fellow, December, 2025
CSIR-Central Drug Research Institute,
India

Master of Pharmacy

University Gold Medalist
CSVТУ, Bhilai

2018

Bachelor of Pharmacy

University Gold Medalist
CSVТУ, Bhilai

2016

KEY RESEARCH INTERESTS

- Nanocarrier based drug delivery
- Targeted therapy for breast cancer and bone metastasis
- Dual drug delivery approaches for synergistic anticancer efficacy
- In vivo pharmacokinetics and biodistribution studies
- PEGylation and surface modification of nanocarriers
- Cell culture-based cytotoxicity and mechanistic assays (MTT, uptake, apoptosis)
- Analytical method development using HPLC and LC-MS/MS
- Bone tissue regeneration and anti-osteoporotic drug delivery
- In vivo cancer modeling and therapeutic efficacy assessment

LANGUAGE

English

Hindi

PASSPORT

Y6004077

Validity : 10/09/2033

AREA OF INTEREST

My research interests lie in the design and development of novel drug delivery systems, with a particular focus on nanocarrier-based platforms such as liposomes, self-nanoemulsifying drug delivery systems, and nanoparticles. I am passionate about targeted and controlled drug delivery approaches for cancer therapy, especially for breast cancer and its metastasis to bone. My work also extends to combination drug delivery strategies and translational pharmaceuticals. I have a strong inclination toward the optimization, characterization, and preclinical evaluation of innovative delivery systems, with the goal of improving therapeutic efficacy.

WORK EXPERIENCE

PROJECT RESEARCH SCIENTIST-I IIT KANPUR

April 2026- July 2026

- Development and in-vivo studies of enema formulation for the management of inflammatory bowel disease.

RESEARCH ASSOCIATE-I IIT GANDHINAGAR

December 2025- April 2026

- Study of liposomal formulations and polymeric implants, their kinetics and release pattern in the presence of enzymatic fluctuations.

RESEARCH SCHOLAR

2020 - 2025

- Developed liposomal, PLGA nanoparticles and SNEDDS-based formulations for combination drug delivery.
- Established and optimized in vivo breast cancer tumor model for evaluating the therapeutic efficacy of drug-loaded nanoformulations.
- Hands-on experience with Biosafety Cabinet Class II for aseptic cell culture

ASSISTANT PROFESSOR

2018 - 2020

- Delivered lectures on core subjects in Pharmaceutics, Organic Chemistry, and Inorganic Chemistry.
- Guided undergraduate students in academic projects and practical training.
- Participated in curriculum development, departmental activities, and examination duties.



writetopoojayadave@gmail.com



+91-7388970011



Lucknow, India



ORCID: 0000-0002-5914-563X

INSTRUMENTATION & METHODOLOGICAL EXPERTISE

Formulation development and characterization:

- Developed drug delivery systems including liposomes, PLGA nanoparticles, and nanoemulsions using Design Expert® software and Quality by Design (QbD) principles to optimize critical formulation parameters.
- Conducted comprehensive physicochemical and biological characterization using techniques such as Dynamic Light Scattering (DLS) for particle size, PDI, and zeta potential; Transmission Electron Microscopy (TEM) for morphological analysis; Differential Scanning Calorimetry (DSC) and Fourier Transform Infrared Spectroscopy (FTIR) for thermal and chemical compatibility; in vitro dissolution studies for drug release profiling; and hemolysis assay to assess red blood cell compatibility.
- Experienced in formulation development of conventional dosage forms, including tablets, capsules, gels, and topical formulations.

Analytical techniques:

- Proficient in analytical techniques including High-Performance Liquid Chromatography (HPLC), Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS), Ultraviolet-Visible (UV-Vis) Spectroscopy.
- In Vivo Imaging System (IVIS) for bioluminescence and fluorescence imaging, and Micro-Computed Tomography (Micro-CT) for 3D imaging of bone and tissue structures.

Cell culture techniques:

- Experienced in cell line maintenance and handling of various breast cancer and immune cell lines, including MDA-MB-231, 4T1, MCF-7, and RAW 264.7.
- Conducted a range of in vitro anticancer assays, such as cell viability assays (MTT), migration and invasion assays, and osteoclastogenesis assays, to evaluate therapeutic efficacy and bone remodeling effects.

In-vivo studies:

- Established and optimized in vivo tumor model for breast cancer using BALB/C mice to evaluate the efficacy of novel drug delivery systems.
- Conducted comprehensive pharmacokinetic studies, including drug absorption, distribution, metabolism, and excretion (ADME) profiling, to assess the bioavailability and therapeutic potential of formulated drugs.
- Performed in vivo biodistribution and therapeutic efficacy assessments to support preclinical development.

AWARDS AND SCHOLARSHIPS

- Awarded the prestigious **DST-INSPIRE Fellowship** by the Department of Science and Technology (DST), **Ministry of Science and Technology, Government of India** – a fellowship granted exclusively to university Gold Medalists for outstanding academic excellence and research potential.
- Qualified Graduate Pharmacy Aptitude Test (**GPAT**), **2016** – All India Rank (AIR): 483 ; Qualified Graduate Pharmacy Aptitude Test (**GPAT**), **2017** – All India Rank (AIR): 1124 Conducted by the All India Council for Technical Education (AICTE), India.
- Awarded With “**Best Poster Presentation**” in CGCOST Sponsored National Seminar On “Newer Dimensions in The Delivery of Phytopharmaceuticals”.
- Awarded **University Gold Medal** for highest academic distinction in Bachelor of Pharmacy (B.Pharm)
- Awarded **University Gold Medal** for highest academic distinction in Master of Pharmacy (M.Pharm)

Research Articles

1. **Yadav P**, Chauhan D, Yadav PK, Kumar A, Yadav M, Tiwari AK, Kothuri N, Verma S, JVUS C, Kashyap A, Kumar A. Engineered Nanoliposomes to Mitigate Osteolytic Bone Lesions in Breast Cancer. *ACS Applied Materials & Interfaces*. 2025 Oct 22. DOI:10.1021/acsami.5c13155
2. **Yadav P**, Singh S, Chauhan D, Yadav PK, Tiwari AK, Kothuri N, et al. LC-MS/MS method for simultaneous Doxorubicin and Baicalein estimation: formulation and pharmacokinetic applications. *Nanomedicine*. 2024;19(25):2085–97. <https://doi.org/10.1080/17435889.2024.2390348>
3. **Yadav P**, Yadav PK, Saklani R, Tiwari AK, Singh S, Shah AA, Verma S, Rana R, Chourasia MK. Development of HPLC Method for Simultaneous Quantification of Doxorubicin and Baicalein Encapsulated in Unilamellar Liposomes. *Sep Sci Plus*. 2025;8(5):e70047. <https://doi.org/10.1002/sscp.70047>
4. **Yadav P**, Chauhan D, Yadav PK, Kashyap A, Gayen JR, Chourasia MK. LC-MS/MS method for co-estimation of doxorubicin and piperine: formulation development and pharmacokinetic studies. *Bioanalysis*. 2025 Aug 25:1-3. <https://doi.org/10.1080/17576180.2025.2548198>
5. Tiwari, A., Yadav, P.K., Shah, A.A., Mishra, K., Rana, R., **Yadav, P.**, Tripathi, S., Chourasia, M.K., 2025. Highly sensitive validated RP-HPLC–DAD method for simultaneous quantification of doxorubicin and docetaxel: augmenting industrial application. *Accreditation and Quality Assurance*, pp.1-16. DOI: 10.1007/s00769-025-01645-x
6. Tiwari, A., Yadav, P., Shah, A.A., Rana, R., **Yadav, P.**, Mishra, K., Tripathi, S., Kothuri, N., Verma, S., Kashyap, A. and Jaiswal, S., 2025. Designing pegylated dextran sheathed doxorubicin loaded iron nanoparticles against premenopausal breast cancer. *International Journal of Biological Macromolecules*, 307, p.141874. DOI: 10.1016/j.ijbiomac.2025.141874
7. Kothuri, N., Verma, S., JVUS, C., Singh, S., **Yadav, P.**, Yadav, P.K., Kashyap, A., Tiwari, A., Sharma, D. and Chourasia, M.K., 2024. Simultaneous UHPLC-PDA Method Development and Validation for Quantification of Quercetin and Erlotinib in Liquid Crystalline Nanoparticle Formulation and Pharmacokinetic Study. *Chromatographia*, 87(10), pp.621-633. DOI: 10.1007/s10337-024-04355-7
8. Yadav, P.K., Verma, S., Chauhan, D., **Yadav, P.**, Tiwari, A.K., Saklani, R., Gupta, D., Rana, R., Shah, A.A., Verma, S. and Naresh, K., 2024. Simultaneous estimation of paclitaxel and bortezomib via LC-MS/MS: pharmaceutical and pharmacokinetic applications. *Nanomedicine*, 19(24), pp.1995-2010. DOI: 10.1080/17435889.2024.2382668
9. Yadav PK, Saklani R, Tiwari AK, Verma S, Chauhan D, **Yadav P**, Rana R, Kalleti N, Gayen JR, Wahajuddin, Rath SK, Mugale MN, Mitra K, Chourasia MK, Ratiometric codelivery of Paclitaxel and

Baicalein loaded nanoemulsion for enhancement of breast cancer treatment. International Journal of Pharmaceutics (2023). <https://doi.org/10.1016/j.ijpharm.2023.123209>

10. Yadav PK, Saklani R, Tiwari AK, Verma S, Rana R, Chauhan D, **Yadav P**, Mishra M, Kedar AS, Kalleti N, Gayen JR, Wahajuddin, Rath SK, Mugale MN, Mitra K, Sharma D and Chourasia MK Enhanced Apoptosis and Mitochondrial Cell Death by Paclitaxel loaded TPP-TPGS1000 Functionalized Nanoemulsion. Nanomedicine (2023). <https://doi.org/10.2217/nnm-2022-0268>
11. Yadav PK, Tiwari AK, Saklani R, Chauhan D, Rana R, **Yadav P**, Mishra K, Kedar AS, Wahajuddin, Gayen JR and Chourasia MK, High Performance Liquid Chromatography Method for Simultaneous Estimation of Paclitaxel and Baicalein: Pharmaceutical and Pharmacokinetic Applications. Bioanalysis (2022). <https://doi.org/10.4155/bio-2022-0100>
12. Saklani R, Tiwari AK, Yadav PK, **Yadav P**, Chourasia MK. Validated HPLC-UV Method for Simultaneous Estimation of Paclitaxel and Doxorubicin Employing Ion Pair Chromatography: Application in Formulation Development and Pharmacokinetic Studies. Nokhodchi A, ed. Biomed Res Int. 2022;2022:1-11. <https://doi.org/10.1155/2022/7708235>
13. Rana, R., Mishra, K., Tripathi, S., Gupta, A.K., Tiwari, A.K., Yadav, P.K., Kumar, A., Chakradhar, J.V.U.S., Singh, S., Verma, S., **Yadav, P.**, Chourasia MK 2024. Simultaneous estimation of rutin and donepezil through RP-HPLC: implication in pharmaceutical and biological samples. Bioanalysis, 16(11), pp.557-567. DOI: 10.1080/17576180.2024.2344395. DOI: 10.1080/17576180.2024.2344395
14. Kawoosa, S., Chakradhar, J.V.U.S., Shafi, H., **Yadav, P.**, Tripathi, S., Fazili, A.A., Bashir, R., Ali, T., Nazir, S., Raza, S.N. and Chourasia, M.K., 2025. Analytical method development for Ellagic acid by RP-HPLC: Comparative solubility and stress stability assessment of pure drug and its solid dispersion formulation. Microchemical Journal, p.114456. DOI: 10.1016/j.microc.2025.114456
15. Mishra, P., **Yadav, P.**, Chourasia, M.K. and Dave, V., 2025. PEGylated MXene@ AgNP nanocomposite for targeted release of docetaxel to breast carcinoma. Therapeutic Delivery, pp.1-11. <https://doi.org/10.1080/20415990.2025.2523731>
16. Maji, I., Munagalasetty, S., Naraharisetti, L.T., Mahajan, S., Aalhate, M., Gupta, U., **Yadav, P.**, Bhandari, V., Godugu, C., Chourasia, M.K. and Singh, P.K., 2025. Benchmarking of pH-responsive mixed micelles for repurposed breast cancer therapy of ibrutinib with molecular modeling and pharmacokinetic insights. Journal of Materials Chemistry B. DOI: 10.1039/D5TB00419E
17. Dadge SD, Khan S, **Yadav P**, Yadav S, Varshney P, Sharma D, Chourasia MK, Gayen JR. Stability- Indicating Reversed-Phase High-Performance Liquid Chromatography Method With Photodiode

Array Detection for Simultaneous Quantification of Futibatinib and Binimetinib in Dual-Drug-Loaded Nanobubbles for Lung Cancer Therapy. *Separation Science Plus*. 2025 Oct;8(10):e70145. <https://doi.org/10.1002/sscp.70145>

Review Articles:

1. **Yadav P**, Singh Y, Chauhan D, Yadav PK, Kedar AS, Tiwari AK, et al. Development and approval of novel injectables: enhancing therapeutic innovations. *Expert Opin Drug Deliv*. 2024;21(4):639–62. <https://doi.org/10.1080/17425247.2024.2351987>
2. Yadav, P.K., Chauhan, D., **Yadav, P.**, Tiwari, A.K., Sultana, N., Gupta, D., Mishra, K., Gayen, J.R., Wahajuddin, M. and Chourasia, M.K., 2025. Nanotechnology Assisted Drug Delivery Strategies for Chemotherapy: Recent Advances and Future Prospects. *ACS Applied Bio Materials*, 8(5), pp.3601-3622. DOI: [10.1021/acsabm.5c00046](https://doi.org/10.1021/acsabm.5c00046)

Book Chapters:

1. Tripathi S, Mishra K, **Yadav P**, Rana R, Chourasia MK. Magnetically responsive and thermo-responsive vesicular carriers for improved drug delivery to tumors. In *Tumor-Targeting with Stimuli-Responsive Vesicular Nanocarriers* 2025 Jan 1 (pp. 199-226). Academic Press.
2. Rana R, Mishra K, Tripathi S, **Yadav P**, Tiwari AK, Yadav PK, Chourasia MK. Metallic nanoparticles for photodynamic cancer therapy. In *Nanophototherapy* 2025 Jan 1 (pp. 301-326). Elsevier.
3. Mishra K, Verma S, **Yadav P**, Tiwari AK, Chakradhar JV, Yadav PK, Chaurasiya A, Chourasia MK. Methods for preparation of giant liposomes: Conventional methods; modified electro-techniques. In *Liposomes in Drug Delivery* 2024 Jan 1 (pp. 517-538). Academic Press.
4. **Yadav P**, Jaiswal S, Tripathi S, Mishra K, Rana R, Chourasia MK. Receptor-ligand-based targeting approaches in breast cancer. *Innovative Targeting Strategies in Breast Cancer Therapy* 2026 Jan 1 (pp. 35-64). Academic Press.
5. **Yadav P**, Mukta Agrawal, Amit Alexander, Ravish Patel, Sabahuddin Siddique, and Shailendra Saraf. "Polymer production and processing using supercritical carbon dioxide." In *Green Sustainable Process for Chemical and Environmental Engineering and Science*, pp. 1-16. Elsevier, 2020.
6. Baghel, Madhuri, **P Yadav**, Hemant Badwaik, and Kartik Nakhate. "Phyto-complexed systems as a versatile tool for the delivery of plant-based drugs." In *Phytopharmaceuticals and Herbal Drugs*, pp. 115-137. Academic Press, 2023.

CONFERENCES

1. Presented poster at an international conference, "9th International Symposium on Current Trends in Drug Discovery Research", 2025.
2. Presented poster at an international conference, "Conference on Drug Development and Drug Delivery-CD4, 2023.
3. Presented Poster at an international conference, on Advances and applications of Artificial intelligence, Machine learning, and Data Sciences".
4. Presented Poster at an international conference, "Recent trends and future opportunities in pharmaceuticals", 2022.
5. Participated in the "e-Workshop organized by Innovative Technology Enabling Centre (InTEC)."
6. Completed Flow Cytometry Workshop-Beckman Coulter Life Sciences.
7. Completed basic application training on SCIEX QTRAP 5500 + LC-MS/MS System.
8. Attended Workshop on "Teamwork for progressing Hit to Candidate Drug"

REFERENCES

1. Dr. Manish K Chourasia

Chief Scientist and Head of the Department,
CSIR-Central Drug Research Institute, Lucknow
manish.chourasia.cdri@csir.res.in

2. Dr. J.R Gayen

Senior Principal Scientist,
CSIR-Central Drug Research Institute, Lucknow
jr.gayen.cdri@csir.res.in

DECLARATION

I certify that the information presented in this curriculum vitae is accurate and complete. I understand that any misrepresentation may result in disqualification from the selection process.

