

Curriculum vitae

DR. AMIT KUMAR

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Academic details

Ph.D., Biological Science November, 2022

Academy of Science and Innovative Research (AcSIR), New Delhi, (CSIR-Indian Institute of Integrative Medicine Jammu India).

Thesis Title: *Evaluation of Immune-modulatory and anti-mutagenic potential of Bakuchiol isolated from psoralea corylifolia”*

Supervisor: Dr.Govind Yadav, Principal Scientist (*CSIR-Indian Institute of Integrative Medicine Jammu India*).

M.Pharma, Pharmacology 2012

Shridhar University Pilani Rajasthan

B.Pharma 2008

Roorkee College Of Pharmacy Roorkee Uttarakhand

Research Experience

Skills / Expertise:

1. *IND Enabling study of promising compounds for drug development.*
2. *Mutagenicity (In vitro Ames test for IND enabling study as per OECD 471).*
3. *In vivo Micronucleus study, Chromosomal aberration assay (Bone marrow collection and preparation for slides for evolution for in-vivo mutagenicity as per OECD).*
4. *Immune-modulation and in-vitro anti-inflammatory studies of natural products (Cytokines study with ELISA, humoral and cell-mediated immune response, Skin allograft rejection, Carbon Clearance etc).*
5. *Handling of different laboratory animal's care and expertise in dosing with different routes of administration (Oral, Intra-peritoneal, Intra-muscular, Intra-venous, Sub-cutaneous, Intra-dermal etc).*
6. *Well experienced with the Handling of different microbes, pathogen's and Microbial Limit Test with Salmonella spp, E.coli, Pseudomonas aeruginosa, Staphylococcus aureus etc.*
7. *Expertise with the handling of primary tissue culture, and cell lines.*
8. *DNA isolation, Plasmid isolation, DNA purification, PCR, Gene cloning etc.*

Instruments handled

Handling of Western blotting Immune-fluorescence confocal microscopy, HPLC, Micro-Plate reader, Colony Counter, PCR, Bio-safety Cabinet level I & II instruments.

Managerial Experience:

1. *Worked a team for conducting IAEC meetings for the Approval of R&D animal study protocols.*
2. *Systematic records keeping of all the approved projects starting from approval to conduction of experimental studies on animals and collection of post experimental details.*
3. *Team member for conducting trainees: hands on training to trainees for oral dosing of test compounds/extracts, observation of animal's behavior or mortality till completion of experiment, collection samples (Blood, separations of serum, plasma, collection of fecal, urine sample analysis).*
4. *Worked as a team for revenue generation at animal house, CSIR-IIIM, Jammu.*

Project and Training:

1. *16 Month's Project Training at Indian Institute of Integrative Medicine CSIR, Jammu from January 2012 to May 2013.*
2. *One-year Industrial Training at AXA Parenteral's Ltd. (Puhana) Roorkee from 1st June 2008 to July 31st 2009.*

National and International Conference:

- *Participation in International workshop "Introduction to Bio-risk Management, workshop for Laboratories" CSIR-IIIM Jammu.*
- *Participation in Conference and Abstract presentation in Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases (IAVMI) 2014.*
- *58th Seminar Indian Pharmaceuticals Congress attended on 1st to 3rd December 2006 at Bombay Exhibition Centre Goregaon Mumbai.*
- *60th Seminar Indian Pharmaceuticals Congress attended in Dwarka Delhi 2008.*

Extra Curricular Activities:

- *Participated in BOSM 2010 (Birla Institute of Technology & Science Pilani Rajasthan) from 15th to 19th September, 2010.*
- *Participated in Volleyball Sports week in Sridhar University Pilani from 27th to 29th March 2011.*
- *Organized Teacher's day celebration September 5th 2010 Cultural events in Sridhar University Pilani.*

Research Summary:

Past one decade has seen a great surge in the research that involves the Immunomodulatory and Anti-Mutagenic techniques. In fact the idea of almost inevitably have found a role in every realm of cell biology, in both health and disease. Concomitantly, IND Enabling study of promising compounds for drug development. Mutagenicity (In vitro Ames test for IND enabling study as per OECD 471. In vivo Micronucleus study, Chromosomal aberration assay (Bone marrow collection and preparation for slides for evolution for in-vivo mutagenicity as per OECD). Immune-modulation and in-vitro anti-inflammatory studies of natural products (Cytokines study with ELISA, Handling of different laboratory animal's care and expertise in dosing with different route's of administration (Oral, Intra-peritoneal, Intra-muscular, Intra-venous, Sub-cutaneous, Intra-dermal etc. Well experienced with the Handling of different microbes, pathogen's and Microbial Limit Test with Salmonella spp, E.coli, Pseudomonas aeruginosa, Staphylococcus aureus etc. Expertise with the handling of primary tissue culture, and cell lines. DNA isolation, Plasmid isolation, DNA purification, PCR, Gene cloning etc. During my graduation, I have been working on the role of Bakuchiol in the modulation of Immunomodulation and Anti-mutagenic potential during carcinogenesis. My work focused on the understanding of the mechanism of biochemical pathways involving immunomodulation during the process of carcinogenesis. To figure out the objectives of my study I used a multi-dimensional approach, right from designing different Immunomodulatory assays like Humoral Immune Response, Cell mediate immune response, Carbon Clearance, Skin allograft rejection, Lymphocyte proliferation assay, In vivo and in-vitro mutagenic assays We have also evaluated the potential of our lead molecule in In-vivo mouse models wherein we found that our molecule could be a possible therapeutic candidate for lymphocytic proliferation. The most promising feature of the synthesized complexes is that they have highly efficient on cancer cells but their toxicity is lower in normal cells.

➤ Reviewer for Journals-

1. Phyto medicine Plus (52 Articles)
2. Food and Chemical Toxicology (5 Articles)
3. Phytomedicine (4 Articles)
4. International Journal of Biological Macromolecules (22 Articles)
5. International Journal of Pharmaceutics. (3 Articles)
6. Phyton-International Journal of Experimental Botany (5 Articles)
7. Journal of Biological Biodiversity (2 Articles)
8. Bentham Science Publisher (3 Articles)
9. Combinatorial Chemistry & High Throughput Screening (5 Articles)
10. Current Topics in Medicinal Chemistry (3 Articles)

Details of publications:

Details of publications:

- **Kumar, A.**, Sawhney, G., Kumar, Nagar, R., Chauhan, N., Gupta, N., Kaul, A., Ahmed, Z., Sangwan, P. L., Satheesh, Kumar, P., Yadav, G. Evaluation of the immunomodulatory and anti-inflammatory activity of Bakuchiol using RAW 264.7 macrophage cell lines and in animal models stimulated by lipopolysaccharide (LPS) <https://doi.org/10.1016/j.intimp.2020.107264>.
- **Kumar, A.**, Kumar, Nagar, R., Munagala, Gurunadham., Qayum, Arem., Singh, Shashank, K., Singh, P. P., Chauhan, N., Nawaz, Shah., Khalid, Arfan., Qasam, Irfan., Yadav, G. Mutagenicity, Cytotoxicity and DNA Damage Study in Mutant *Salmonella typhimurium* and HL-60 Cell Line Treated with a Potent (R)-3,5-Dinitro-N-(1-(p-tolyl)ethyl) Benzamide (DNB). **Ann. clin. pharmacol. toxicol. Vol- 2 014-020 (2021)**.
- **Amit Kumar.** Govind Yadav "Potential role of medicinal plants for their Immunomodulatory Activity- A Review". **Ann. clin. Pharmacol. toxicol. 2022 3: (1) 1021**.
- Vinay Kumar, **Amit Kumar**, Narendra Singh Chauhan, Govind Yadav, Mayank Goswami, P. Gopi Nath "Design and Fabrication of a Dual Protein-Based Trilayered Nanofibrous Scaffold for Efficient Wound Healing" ACS-Applied Bio-materials, 15 <https://doi.org/10.1021/acsabm.2c00200>.
- Priyanka Danai, Saraswati Patel, Varsha Pandey, Purendra Singh, Govind Yadav, **Amit Kumar***, Teena Agarwal, Antiulcerogenic activity of *Anogeissus pendula* hydroalcoholic extract on pylorus ligated induced gastric ulcers in Albino Wistar rats. <https://doi.org/10.1016/j.phyplu.2021.100127>.
- Varsha Pandey, Saraswati Patel, Priyanka Danai, Govind Yadav, **Amit Kumar.*** Phyto-constituents profiling of *Prosopis cineraria* and in vitro assessment of anti-oxidant and anti-ulcerogenicity activities. <http://go.microsoft.com/fwlink/?LinkId=69157>.
- Kumar, Chetan; Chandan, Gourav; Kushwaha, Manoj; **Kumar, Amit**; Kaur, Sukhleen; Kumar, Ajay; Yadav, Govind; Gairola, Sumeet; Vishwakarma, Ram; Satti, Naresh; Verma, Mahendra "Discovery of Anti-NLRP3 inflammasome, Immunomodulatory Phytochemicals from the Extract of *Habenaria intermedia* D. Don: an Unexplored Plant Species" ACS Omega <https://doi.org/10.1021/acsomega.3c03071>.
- Harshita Tiwari, **Amit Kumar**, Manas Ranjan Barik, Harjot Kaur, Shubham Mahajan, Monu Kumar Shukla, Monika Gupta, Govind Yadav, Amit Nargotra* "Repositioning the existing drugs for neuroinflammation: A fusion of computational approach and biological validation to counter the Parkinson's disease progression" **Molecular Diversity** <https://doi.org/10.1007/s11030-023-10708-5>.
- Jasbir Kour; Bashir A Lone; **Amit Kumar**; Bashir A Ganaie; Govind Yadav; Seema Akbar; Md. Niamat Ali "Bioassay-guided isolation and identification of antimutagenic compounds for *Morina coulteriana* and evaluation of its therapeutic potential" <https://doi.org/10.1016/j.phyplu.2024.100676>.
- Aqib Altaf Zarger, Kamran Mir, **Amit Kumar**, Reyaz Hassan Mir, Narendra Chauhan, Arif Saleem, Govind Yadav, Nahida Tabassum "Evaluation of the anti-epileptic activity of *Salvia moorcroftiana* against pilocarpine induced epilepsy in mice" **Ann. clin. Pharmacol. toxicol. 2022**.
- Mahaveer Singh, Hemant R. Jadhav and **Amit Kumar** "Design, Synthesis and *In-vitro* Evaluation of Piperazine Incorporated Novel Anticancer Agents" **Letters in Drug Design & Discovery**, 2018, 15, <http://dx.doi.org/10.2174/1570180815666171211161501>.
- Shweta Saini* **Amit Kumar**, "Sustained Release Pellets for Antidiuretic Drugs Formulation & Clinical Evaluation" *Int. J. of Pharm. Sci.*, 2025, Vol 3, Issue-4, 3131-3138. <http://doi.10.5281/zenodo.15295146>.
- Amit Adhikari*, Anash Khan, **Amit Kumar** "Formulation, Evaluation and Applications of Omeprazole Pellets IP: A Brief Review" *Int. J. of Pharm. Sci.*, 2025, Vol 3, Issue-5, 2503-2509, <http://doi.10.5281/zenodo.15426341>.

- Arjun Kumar Sharma, **Amit Kumar**, “Designing of Sustained Release Formulations and Evaluation of Coating Thickness on Release Pattern” Journal of Emerging Technologies and Innovative Research ,JETIR April 2025,Volume-12,Issue 4, JETIR-2504948 www.jetir.org/ISSN-2349-5162,
- Chandan Saini, **Amit Kumar** “Probiotic formulation and Quality Delivery System of Proton pump inhibitor” International Journal of Research Publication and Reviews, Vol (6), Issue (4),April(2025),Page–8898-8902, ISSN 2582-7421, Journal home page:www.ijrpr.com.
- Mamta Kukreti, **Amit Kumar** “Formulation of Immediate release & sustained release pellets for pediatric application” Journal of Emerging Technologies and Innovative Research, JETIR April 2025,Volume-12,Issue 4, JETIR-2504976, www.jetir.org/ISSN-2349-5162,
- Priti Kumari, **Amit Kumar** “Gastroprotective Drug Delivery system and their role in advancing Cardiovascular therapeutics” Int.J.of Pharm.Sci., 2025, Vol 3, Issue-6, 1507-1522, <http://doi.10.5281/zenodo.15615932>.
- Ranjeet Singh, **Amit Kumar** “Coating Techniques for sustained release pellet dosage forms: Strategies for achieving Zero order release kinetics” Int.J.of Pharm.Sci., 2025, Vol 3, Issue-5,477-483, <http://doi-10.5281/zenodo.15334874>.
- Rasheeda Parveen, **Amit Kumar** “Improvement in designing formulation and development through QBD-Based SOPs” Int.J.of Pharm.Sci, 2025, Vol 3, Issue-5, 3799-3809, <http://doi.org/10.5281/zenodo.15489955>.
- Saksham Sharma, **Amit Kumar** “Optimization & Evaluation of coating uniformity in sustained and Immediate release of proton pump inhibitors (PPIS)” Int.J.of Pharm.Sci, 2025, Vol 3, Issue-4, 3123-3130, <https://doi.org/10.5281/zenodo.15294873>.
- Shantanu Kumar Singh, **Amit Kumar** “Formulation and development of Pantoprazole sodium pellets for rapid onset of action” International journal of research publication and reviews,vol-6, issue 4, April (2025),Page-11491-11499, [www.ijrpr.com > uploads > IJRPR43188](http://www.ijrpr.com/uploads/IJRPR43188).
- Shazuddin Shamsi, **Amit Kumar** “Integrating quality management systems (QMS) and quality by design (QBD) in the design and development of Dexlasoprazole pellets: Enhancing product quality, consistency and regulatory compliance” Int.J.of Pharm.Sci, 2025, Vol 3, Issue-5, 1054-1060, <https://doi.org/10.5281/zenodo.15353201>.
- Shweta Saini, **Amit Kumar** “ Sustained released pellets for antidiuretic drugs formulation and clinical evaluation” Int.J.of Pharm.Sci, 2025, Vol 3, Issue-5,3131-3138, <https://doi.org/10.5281/zenodo.15295146>.
- Tanu Shri Biswas, Anash Khan, **Amit Kumar** “Impact of nanoparticles size and concentration on the release profile and pharmacokinetic of proton pump inhibitors (PPIS): A Comprehensive Review” Int.J.of Pharm.Sci, 2025, Vol 3, Issue-5, 2809-2815, <https://doi.org/10.5281/zenodo.15448392>.
- Pramod Kumar*, **Amit Kumar** “Sustained release pre filled syringe and their role in advancing antiemetic therapeutic” Int.J.of Pharm.Sci, 2025, Vol 3, Issue-7, 1495-1497, <https://doi.org/10.5281/zenodo.15855504>.

Manuscripts submitted/ under preparation

- **Amit Kumar**, Jasbir Kour, Rakesh Kumar Nagar, Irfan Qasam, Govind Yadav, “Amelioration of the Cyclophosphamide induced genotoxic damage in mice by the Bakuchiol isolated from *psoralea corylifolia*” submitted in **Environmental and molecular mutagenesis 2024**,(EMM-24-0089).
- Shah Nawaz, Narendra Chauhan, Irfan Qasam, Irfan Khalid, **Amit kumar**, Rakesh Kumar Nagar, Monu Kumar Shukla, Anil Kumar, Divya Misra, Yedukondalu Nalli, Asif Ali, Anindya Goswami, Zabeer Ahmed, “Evaluation of immunomodulatory and anti-inflammatory activity of isotelekin isolated from *Inularacemose* against IL6, TNF α , IFN γ , INOS, COX2 using LPS induced macrophages RAW264.7 cells and antigenically sensitized mice” **Cytokine (Submitted)**.

Patent-

- Malik, Fayaz., Ahmed, Naveed., Mir, Sameer., Khan, Shahnawaz .,Khan,Sameer,Ullah., Paddar,Ahmad, Masroor., Kaur, Loveleena, Anand., Mir, Shahid, Maqbool.,Kumar, Atul., Padala, Anil., Chashoo, Gousia., Nandi, Utpal., Singh, Gurdarshan., Shah, Bhahwal Ali., Qazi., Hamza, Baseerat., Kaneez,Fatim.,Nadiem,Nazir.,Dogra,Ashish.,**Kumar.Amit.**,Yadav,Govind.Amino Acid-containing imidazoles as potential stem cell modulator useful against paclitaxel resistant triple negative breast cancer.NF No.0077NF2021 19-May-2021.
- Yadav,Govind., Sangwan, PL., Gupta, PN., Khan, IA., Katare, Anil., Singh, Deepika., **Kumar. Amit.**, Chouhan, Narender., Gupta,Rahul., Raina,Diksha., Dang, Ajay, K., Rahal, Anu. Formulation composition for the treatment of sub clinical mastitis thereof. NJF No.0102nf2022.

Annual Report-

- Yadav, Govind.,Sangwan, P.L.,Gupta, P.N., Khan IA.,Katare Anil.,Deepika.,**Kumar. Amit.**,Chauhan,Narendra.,Nagar,Rakesh,Kumar.,Gupta,Rahul.,Raina,Diksha.,Dang,Ajay.,K,Rahul,Anu. Development of Phytopharmaceutical product for Bovine mastitis. Page No. 118-121,(2021)
- Yadav,Govind.,Chauhan,Narendra.,**Kumar.Amit.** agar,Rakesh,Kumar.,Sangwan,P.L.,Kumar,Taku, Anil. “Antibacterial efficacy of natural product (Boswellia serrata extract) against staphylocococcus aureus clinical isolate from mastitis”. Page No. 118-121,(2021).
- Rakesh Nagar, **Amit Kumar** and Narendra Chauhan,Govind Yadav and Satheesh Kumar P. “Standardization and Establishment of Mouse Model for testing of compounds / drugs for infection and inflammation of mammary gland” Page No. 95 (2017-18).
- Govind Yadav, Satheesh Kumar P, Rakesh Nagar, **Amit Kumar** and Narendra Chouhan “Establishment of Pedigree and its evaluation in different pharmacological studies” Page No.96 (2017-18).

References:

1- Dr.Govind Yadav

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2- Dr.P.N.Gupta Principal Scientist Division of PK-PD,IIIM (CSIR)Canal Road Jammu

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