



Dr. Manoj Kumar

Assistant Professor-III

Specialization: **DNA repair, Epigenetics, Cancer and Disease Biology, Stem cell biology, p53 Gain of Function Mutations, Cancer Therapeutics**

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Academic Background:

Dr. Manoj Kumar obtained Ph.D. in cancer biology from the Cytogenetics Laboratory, Department of Zoology, Banaras Hindu University. In his PhD work, he discovered the role of DNA repair pathway in gallbladder cancer pathogenesis. Thereafter, he joined Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, as a research associate and explored the field of cancer epigenetics. He made the intriguing discovery that the oral cancer-associated TP53 variant P152Lp53 protein has gain-of-function properties inducing tumorigenesis by altering several cancer-associated cell signaling pathways, and these properties of this mutant proved it to be in the GOF mutants' category. He served a brief stint as a CSIR pool scientist at the National Institute of Cancer Prevention and Research (NICPR), Noida.

Research Interests:

Dr. Manoj is interested in investigating genetic and epigenetic alterations during carcinogenesis and cancer stem cell maintenance by employing novel strategies and approaches. His main aim of research is to understand the molecular changes during cancer initiation, metastasis, and chemoresistance to develop a more effective treatment regime for cancer by identifying specific molecular targets and signaling pathway.

Fellowships and Awards:

1. **SERB-Teacher Associateship of Research Excellence, 2019**
2. **CSIR- Senior Research Associate (Scientist Pool Scheme), 2017**
3. **CSIR UGC-JRF, 2003**
4. **Post-Graduate Merit scholarship, 2001-2003**

Professional affiliation:

1. **Society of Biological Chemists (India)**
2. **Indian society of Cell Biology**

Current Research Projects:

1. **DHR funded research project entitled “Understanding the role of Aurora A kinase in Gallbladder cancer progression and maintenance of cancer stem-like cells: Implication in early diagnosis and Chemo-resistance” as Mentor for DHR Women Scientist.**
2. **ICMR funded research project entitled “Deciphering Androgen receptor/Aurora kinase A /NF-kB signaling axis in induction of inflammatory response in polycystic ovary syndrome (PCOS): A Search for potential drug candidates” as PI.**

Selected important Publications:

1. Hypothesis: Androgen receptor/Aurora A kinase/NF- κ B signaling axis induce inflammatory response during polycystic ovarian syndrome progression, **Kumar M.** *Medical Hypotheses* (2024), 184, 111286. ((Impact factor 4.7)
2. Multifunctional human chromatin protein PC4 is downregulated in Breast Cancer to promote disease progression: Implications of miR-29a, Sikder S, Kumari S, **Kumar M**, Sen S, Singhal N, Chellappan S, Godbole M, Chandrani P, Dutt A, Gopinath K, Kundu TK, *Oncotarget* (2019), 10(64), 6855-6869. (Impact factor 5.1)
3. The cancer-associated, gain-of-function TP53 variant P152Lp53 activates multiple signaling pathways implicated in tumorigenesis, Singh S *, **Kumar M** *, Kumar S *, Sen S, Upadhyay P, Bhattacharjee S, Naveen M, Tomar VS, Roy S, Dutt A, and Kundu TK, *Journal of Biological Chemistry (JBC)* (2019), 294, 14081- 14095. *Equal first author. (Impact factor 5.4)
4. Functional interplay between YY1 and CARM1 promotes oral carcinogenesis, Behera AK, **Kumar M**, Shanmugam MK, Bhattacharya A, Rao VJ, Bhat A, Vasudevan M, Gopinath KS, Mohiyuddin A, Chatterjee A, Sethi G, Kundu TK, *Oncotarget* (2019),10(38), 3709-3724. (Impact factor 5.1)
5. Dysregulated expression and sub cellular localization of Base Excision Repair (BER) pathway enzymes in Gallbladder cancer, **Kumar M**, Shukla VK, Misra PK, Raman MJ, *International Journal of Molecular and Cellular Medicine* (2018), 7(2), 119-132. (Impact factor 1.7)
6. Oncogene c-fos and mutant R175H p53 regulate expression of Nucleophosmin implicating cancer manifestation, Senapati P, Dey S, Sudarshan D, Das S, **Kumar M**, Kaypee S, Mohiyuddin A, Kodaganur GS, Kundu TK, *FEBS Journal* (2018), 285(18), 3503-3524, (Impact factor: 5.6)
7. Reinstating plasticity and memory in a tauopathy mouse model with an acetyltransferase activator, Chatterjee S, Cassel R, Schneider-Anthony A, Merienne K, Cosquer B, Tzeplaeff L, Halder Sinha S, **Kumar M**, Chaturbedy P, Eswaramoorthy M, Le Gras S, Keime C, Bousiges O, Dutar P, Petsophonsakul P, Rampon C, Cassel JC, Buée L, Blum D, Kundu TK, Boutillier AL, *EMBO Molecular Medicine* (2018), 10(11).(Impact factor: 14.0)
8. Shape-directed compartmentalized delivery of a nanoparticle-conjugated small molecule activator of an epigenetic enzyme in the brain, Chaturbedy P, **Kumar M**, Salikolimi K, Das S, Sinha SH, Chatterjee S, Suma BS, Kundu TK, Eswaramoorthy M, *Journal of Controlled Release* (2015), 217, 151-159. (Impact factor: 11.4)