

## Template Format for NICPR Scientific Staff Information

**Name:** Dr Pramod Kumar

**Designation:** Scientist D

**Division/Department:** Molecular Biology

**Educational Qualification:** PhD

**Work Experience:**

1. **Scientist 'D'** (July 2024 onwards), ICMR-NICPR, Noida
2. **Scientist 'C'** (May 2020-June-2024), ICMR-NICPR, Noida
3. **Assistant Director** (Molecular Biology) May 2019 to April 2020:  
National Centre for Disease Control, Delhi-110054
4. **Scientist-III**, (September-2017 to May 2019)  
Reproductive Biology, All India Institute of Medical Sciences, New Delhi-110029
5. **CISR-Pool Scientist** (Apr-2015 to September-2017)  
Microbiology, National Centre for Disease Control, Delhi-110054
6. **UGC-DS Kothari postdoctoral Fellow** (2011-2014)  
School of Life Sciences, Jawaharlal Nehru University, New Delhi



**Research Interests:**

Microbiome and Cancer; Tumor immunology; chronic viral hepatitis in HCC development; neoadjuvant therapy

**Membership of Professional Societies:**

Member of External Quality Control System (EQAS), WHO, Geneva

Life member of Association of Microbiologists of India (AMI), India

Member American Chemical Society' (ACS), USA

Member of 'American Society for Microbiology' (ASM), USA

Member American Society for Biochemistry and Molecular Biology' (ASBMB), USA

**Member of any national/international research/academic committee:**

- i. **External member, Research Committee**, Post Graduate Institute of Child Health, Noida (2024-onwards)
- ii. **External member, doctoral committee:** Department of Biotechnology, AIIMS, New Delhi (2020- onwards).
- iii. **Jury Member** of the scientific committee and eminent session for "Young Scientist Conclave (YSC-2020- Current Pandemic; Future Crisis, India International Science Festival (IISF 2020)".

**Fellowships/Awards/Patents (academic/national/international):**

- **Corona Warrior Award** for extraordinary performance and commitment to duty in high throughput laboratory for COVID-19 testing, ICMR-NICPR, Noida.

- Academic excellence award-2023(ICMR-NICPR, Noida)
- **CSIR-Senior Research Associateship (Pool Scientist)**, CSIR, 2015-2017
- **DS-Kothari Post-Doctoral Fellowship**, UGC, India 2011-24
- **Senior Research Fellowship (SRF-NET)**, CSIR, 2008-2011
- **Junior Research Fellowship (JRF)** with qualification of **National Eligibility Test (NET)** for Lectureship, CSIR-UGC, 2006-2008
- **International travel awards/grants** from American Society for Biochemistry and Molecular Biology (USA), DST, ICMR and CSIR, India

**Scholarly credentials:** Total citations: 1228

h-index: 21

**Publications: (latest first and in Vancouver style with latest impact factor):**

1. Jogi MK, Asnani H, Singh S, **Kumar P \***, 2024. Nimbolide: A Potential Phytochemical Agent in Multimodal Pancreatic Cancer Therapies. Mini Reviews in Medicinal Chemistry. Accepted (MS ID: BMS-MRMC-2023-329).
2. Bijla M, Saini SK, Pathak A, Bharadwaj KP, Sukhvasi K, Patil A, Saini D, Yadav R, Singh S, Leeuwenburgh C, **Kumar P\***, 2024. Microbiome interactions with different risk factors in development of myocardial infarction. *Exp Gerontol*. 2024 Mar 22:112409. doi: 10.1016/j.exger.2024.112409.
3. Dobhal S, Chauhan C, Kumar S, Shikha S, Jogi MK, Kumar D, Kumar A, Jaiswal VK, **Kumar P\***. 2024. *In silico* identification of MHC displayed tumor associated peptides in ovarian cancer for multi-epitope vaccine construct. *Endocrine, Metabolic & Immune Disorders - Drug Targets*. doi: 10.2174/0118715303169428231205173914.
4. Kaur R, **Kumar P**, and Kumar A, 2023. Insights on the Nuclear Shuttling of H2A-H2B histone chaperones. *Nucleosides, Nucleotides & Nucleic Acids*. DOI: 10.1080/15257770.2023.2296616.
5. Aasarey R, Yadav K, Kashyap BK, Prabha, S, **Kumar P**, Kumar, A, Ruokolainen J, Kesari K, 2023. Role of immunological cells in hepatocellular carcinoma disease and associated pathways. *ACS Pharmacology & Translational Science*. In press. doi.org/10.1021/acspsci.3c00216. IF=6.0
6. Shikha S, Jogi MK, Jha R, Kumar R A, Sah T, Singh P, Sagar R, Kumar A, Marwal R, Ponnusamy K, Agarwal SM, Kumar RS, Arif N, Bharadwaj M, Singh S, **Kumar P\***. 2023. Genome sequencing of SARS-CoV-2 Omicron variants in Delhi reveals alterations in immunogenic regions in spike glycoprotein. *Frontiers Immunology*. DOI:10.3389/fimmu.2023.1209513. IF: 7.3
7. Garg K, Kumar A, Kizhakkethil V, **Kumar P** and Singh S, 2023. Overlap in oncogenic and pro-inflammatory pathways associated with Areca nut and nicotine exposure. *Cancer pathogenesis and therapy* doi:10.1016/j.cpt.2023.09.003.
8. Roy SP, Yashavardhan MH, Gupta A, **Kumar P**, Kumar A, Arif N, Agrawal U, Kumar RS, Singh S. 2023. Insights from establishing a high throughput viral diagnostic laboratory for SARS-CoV-2 RT-PCR testing facility: challenges and experiences. *Front Public Health*. 11:1122715. IF=6.461
9. Jadaun P, Seniya C, Pal SK, Kumar S, **Kumar P**, Nema V, Kulkarni SS and Mukherjee A. 2022. Elucidation of antiviral and antioxidant potential of C-Phycocyanin against HIV-1 infection through *in silico* and *in vitro* approaches. *antioxidants*. 11(10):1942. IF=7.765
10. **Kumar P**, A Rani, S Singh, A Kumar. 2022. Recent advances on DNA and omics-based technology in Food testing and authentication: A review. *Journal of Food Safety*, e12986. IF=2.449
11. Dhingra A, Sharma D, Kumar A, Singh S, **Kumar P\***. 2022. Microbiome and Development of Ovarian Cancer. *Endocrine, Metabolic & Immune Disorders - Drug Targets*. 22(11):1073-1090. IF=2.387
12. Mandhan P, Sharma S, Pandey S, Chandel N, Chourasia N, Moun A, Sharma D, Sukar R, Singh N, Mathur S, Kotnala A, Negi N, Ashish Gupta A, Anuj Kumar A, R Kumar RS, **Kumar P\***, Singh S. 2022. A regional pooling Intervention in a High throughput COVID-19 diagnostic laboratory to enhance throughput, save Resources and Time over 6 months. *Frontiers in Microbiology*. 9;13:858555. IF=6.064

13. Ahlawat, S, **Kumar P**, Mohan, H, Goyal S, Sharma KK. 2021. Inflammatory Bowel Disease: tri-directional relationship between microbiota, immune system and intestinal epithelium. *Critical Reviews in Microbiology*. 47(2):254-273. IF=7.391
14. Srivastava A, Pandey RK, **Kumar P**, Rasalkar AA, Tamang R, Shrivastava P, and Chaubey G. Most frequent South Asian haplotypes of ACE2 share identity by descent with East Eurasian populations. *PLoS One*. 2020; 15(9): e0238255. IF=3.752
15. Singh P, Chakraborty R, Marwal R. **Kumar P\*** et al., 2020. A rapid and sensitive method to detect SARS-CoV-2 virus using targeted-mass spectrometry. *J Proteins Proteomics*. 2020; 11(3): 159- 165.
16. **Kumar P**, Pandey R, Sharma P, Dhar MS, et al. 2020. Integrated genomic view of SARS-CoV-2 in India Wellcome Open Research, 3: 5:184. IF:2.727
17. **Kumar P\***, Yadav P, Ingole KV, Jaiswal R, Khalid NS, Deshmukh DG, Goel AK and Yadava PK\* 2020. Emergence of Haitian variant genotype and altered drug susceptibility in *Vibrio cholerae* O1 ElTor associated cholera outbreaks in Solapur, India. *International Journal of Antimicrobial Agents*. 55(3):105853. IF=15.441
18. Pathak AK, Kadiyan A, Kushniarevich A, Montinaro F, Mondal M, Singh S, **Kumar P**, Rai N, Parik J, Metspalu E, Rootsi S, Pagani L, Kivisild T, Metspalu M, Chaubey G and VILLEMS V 2018. The genetic ancestry of modern Indus Valley populations from Northwest India. *American Journal of Human Genetics*. 103:918-29. **IF=11.043**
19. Jaiswal RK, **Kumar P**, Kumar M, Yadava PK, 2018. hTERT promotes tumor progression by enhancing TSPAN13 expression in osteosarcoma cells. *Molecular carcinogenesis*. 57(8):1038-1054. **IF=5.139**
20. **Kumar P\***, Karmakar S\*, Prasad R, Chopra R, Khandelwal S, Gupta S, Dhariwal AC, Yadav P, Yadava PK 2018. Persistent diarrhea in a five-month-old baby carrying *Vibrio cholerae* nonO1/nonO139 producing Haitian cholera toxin. *New Microbes and New Infections*. 21: 72–74. **IF= 4**
21. **Kumar P\***, Yadav P, Deshmukh DG, Bulle PA, Singh D, Singh N, et al 2017. *Vibrio cholerae* O1 with *ctxB7* variant genotype acquired *qnrVC* mediated ciprofloxacin resistance in Yavatmal, India. *Clinical Microbiology and Infection*. 23(12):1005-6. **IF=13.31**
22. Mishra DK, Srivastava P, Sharma A, Prasad R, Bhuyan SK, Malage R, **Kumar P**, Yadava PK. 2017. Translationally controlled tumor protein (TCTP) is required for TGF- $\beta$ 1 induced epithelial to mesenchymal transition and influences cytoskeletal reorganization. *Biochim Biophys Acta-Molecular Cell Research*. 1865(1):67-75. **IF =5.011**
23. Jaiswal R, **Kumar P**, Sharma A, Mishra DK, Yadava PK. 2017. Proteomic identification of proteins differentially expressed following overexpression of hTERT (human telomerase reverse transcriptase) in cancer cells. *PLoS One*. 12(7):e0181027 **IF=3.752**
24. Bhuyan SK, Vairale MG, Arya N, Yadav P, Veer V, Singh L, Yadava PK, **Kumar P\*** 2016. Molecular epidemiology of *Vibrio cholerae* associated with flood in Brahmaputra river valley, Assam, India. *Infection Genetics and Evolution*. 40:352-6. **IF=4.393**
25. Bhuyan SK, Bandyopadhyay P, **Kumar P**, Mishra DK, Prasad P, Kumari A, Upadhyaya KC, Varma A & Yadava PK, 2015. Interaction of *Piriformospora indica* with *Azotobacter chroococcum*. *Scientific Report*. 5:13911. **IF=4.996**
26. Yadav J, Kumar A, Mahor P, Goel AK, Chaudhary HS, Yadava PK, Yadav H and **Kumar P\*** (2015). Distribution of airborne microbes and antibiotic susceptibility pattern of bacteria during Gwalior trade fair, Central India. *Journal Formosan Medical Association*. 114:639-46. **IF=3.871**
27. Sharma A, Sharma KK, **Kumar P** and Ramchiary R. 2015. Laccase isozymes from *Ganoderma lucidum* MDU-7: isolation, characterization, catalytic properties and differential role during oxidative stress. *Journal of Molecular Catalysis B: Enzymatic*. 113: 68-75. IF=2.93
28. **Kumar P**, Mishra DK, Deshmukh DG, Jain M, Zade AM, Ingole KV, Goel AK and Yadava PK (2014) *Vibrio cholerae* O1 Ogawa El Tor strains with the *ctxB7* allele driving cholera outbreaks in South-Western India in 2012. *Infection Genetics and Evolution*. 25:93-6. **IF=4.393**
29. **Kumar P**, Mishra DK, Deshmukh DG, Jain M, Zade AM, Ingole KV and Yadava PK (2014) Haitian variant *ctxB* producing *Vibrio cholerae* O1 with reduced susceptibility to ciprofloxacin is persistent in Yavatmal, Maharashtra, India after causing a cholera outbreak. *Clinical Microbiology and Infection*. 20(5):O292-O293. **IF=13.31**

30. Jaiswal R, **Kumar P**, Yadava PK (2013). Telomerase and its extracurricular activities. *Cellular and Molecular Biology Letters*. 18(4): 538-554. **IF=8.702**
31. **Kumar P**, Jain M, Goel AK and Kamboj DV (2012). Tetracycline resistant *V. cholerae* O1 biotype El Tor serotype Ogawa with classical *ctxB* from a recent cholera outbreak in Orissa, Eastern India. *Journal of Infection and Public Health*. 5:217-219. **IF=7.537**
32. **Kumar P**, Mahor P, Goel AK, Kamboj DV and Kumar O (2011). Aero-microbiological study on distribution patterns of bacteria and fungi during weekdays at two different locations in the urban atmosphere of Gwalior, Central India. *Scientific Research and Essays*. 6(25):5435-5441.
33. **Kumar P**, Jain M, Goel AK, Bhadauria S, Sharma SK, Kamboj DV, Singh L, Ramamurthy T and Nair GB (2009). A large cholera outbreak due to a new cholera toxin variant of *Vibrio cholerae* O1 El Tor biotype in Orissa, Eastern India. *Journal of Medical Microbiology*. 58: 234-38. **IF=3.196**
34. Jain M, Kushwah KS, **Kumar P** and Goel AK. 2013. Molecular Characterization of *Vibrio cholerae* O1 Reveals Continuous Evolution of Its New Variants in India. *Indian Journal of Microbiology*. 53 (2):137-141. IF=2.461
35. Singh S, **Kumar P**, Gopalan N, Shrivastava B, Kuhad RC and Chaudhary HS. 2012. Isolation and partial characterization of actinomycetes with antimicrobial activity against multidrug resistant bacteria. *Asian Pacific Journal of Tropical Biomedicine*. S1147-S1150. **IF=1.514**
36. Goel AK, Jain M, **Kumar P**, Sarguna P, Bai M, Ghosh N and Gopalan N 2011. Molecular characterization reveals involvement of altered El Tor biotype *Vibrio cholerae* O1 strains in cholera outbreak at Hyderabad, India. *The Journal of Microbiology*. 49(2):280-4. **IF=3.422**
37. Goel AK, Jain M, **Kumar P**, and Jiang SC. 2010. Molecular characterization of *Vibrio cholerae* outbreak strains with altered El Tor biotype from southern India. *World Journal of Microbiology and Biotechnology*. 26(2):281-87. **IF=4.253**
38. Goel AK, Jain M, **Kumar P**, Kamboj DV and Singh L (2009). Virulence profile and clonal relationship among the *Vibrio cholerae* isolates from ground and surface water in a cholera endemic area during rainy season. *Folia Microbiologica*. 55(1):69-74. **IF=2.629**
39. Jain M, **Kumar P**, Goel AK, Kamboj DV, Singh L (2008). Class 1 integrons and SXT elements conferring multi-drug resistance in *V. cholerae* O1 strains associated with a recent large cholera outbreak in Orissa, Eastern India. *International Journal of Antimicrobial Agents*. 32(5)459-60. **IF=15.441**
40. Goel AK, Jain M, **Kumar P**, Bhadauria S, Kamboj DV and Singh L (2008). A new variant of *Vibrio cholerae* O1 El Tor causing cholera in India. *Journal of Infection*. 57(3):280-81. **IF=38.637**
41. Goel AK, Bhadauria S, **Kumar P**, Kamboj DV and Singh L (2007). Semi nested PCR reaction for detection of toxigenic *Vibrio cholerae* from environmental water samples. *Indian J. Microbiol*. 47: 186-190. IF=2.461

(\*: corresponding author)

**Popular articles/op-ed/media-coverage: (latest first and provide title and link):**

Interviewed by **DD News** for “molecular diagnosis of SARS-CoV-2” and telecasted on 14<sup>th</sup>, March, 2020.

**Presentations/Talks/Lectures: (latest first, title of the presentation, organized by and date)**

Ongoing:

1. Role of intra-tumoral microbiome in progression of Oral squamous cell carcinoma (OSCC) (Extramural Adhoc, ICMR; **Role: PI**; Cost: 49 Lakhs) 2024 to 2027
2. Title: Immune response to precautionary third dose of COVISHIELD/COVAXIN among healthy adult population: an ICMR Cohort study, India (ICMR; Role: Site **PI**)

Completed

1. Title: In vitro evaluation of effects of electromagnetic fields (EMF) on male reproductive health ICMR, India Cost: INR 1.05 Crore ( **Co-investigator**)
2. Defence Research and Development Organization, India Cost: INR 9.8 Lakhs (**Co-PI**)  
Title: Molecular insights into emerging drug resistance in *Vibrio cholerae*
3. Chhattisgarh Council of Science & Technology, Raipur Cost: INR 4.5 Lakhs (**Co-PI**)  
Title: In vitro screening of Chhattisgarh based herbs for countering diarrhea, with special emphasis on cholera
4. Performance evaluation of a CRISPR-Cas9 based diagnosis kit developed by CSIR, India for SARS-CoV-2 in COVID-19. Intramural funding: National Centre for Disease Control, India (**Co-PI**)
5. Molecular epidemiology of SARS-CoV-2 and Host response in COVID-19 patients Intra mural funding: National Centre for Disease Control, India: (Role: Co-investigator)

### Research group:

1.	Dr Akshay Shankar (Postdoc Fellow)	Production and purification of bioactive metabolites from medicinal basidiomycetous molds and their role in colorectal cancer reversal in a suitable rat model	2023-2025
2.	Dr. Sristy Shikha (Postdoc Fellow)	Preparation, encapsulation of recombinant multiepitope protein/peptides of SARS-CoV-2 in nanoparticles and their immunogenic studies	2021-2023
3.	Mr Mukesh Kumar Jogi (ICMR-SRF)	<b>A novel targeted therapeutic formulation for drug delivery to treat pancreatic cancer using nimbolide based nanoparticles.</b>	2022-2025
4.	Ms Ayurishi Patil <b>CSIR-NFOBC, JRF</b>	<b>Tumor microbiome in Oral Cancer</b>	2024-Onwards
5.	Ms Diksha Saini <b>UGC- JRF</b>	<b>Tumor immune response in Oral Cancer</b>	2024-Onwards

### Brief Biosketch:

we are exploring role of microbiome in development of oral cancer, interactions of different risk factors with microbiome. I have experience in development of molecular diagnostics for selected bacterial pathogens (*Bacillus anthracis*, *Vibrio cholerae*, *Staphylococcus* sps etc.) and viral pathogens (HAV, HBV, HCV, HEV and SARS-CoV-2). During my research tenure (2006 to 2020), actively participated in various outbreaks of cholera, anthrax, COVID-19, viral hepatitis and food poisoning in India. Our remarkable study revealed a novel allelic form of cholera toxin in *V. cholerae* O1 strains causing a devastating cholera epidemic in Odisha in 2007 (Kumar et al., 2009). These isolates rose in fame as Haitian cholera toxin (HCT) harbouring strain when they caused most devastating epidemic in Haiti in 2010. These strains have been positively

selected and have spread globally and have been associated with greater mortality, and spread throughout India and associated with higher mortality (Kumar et al., 2014 & 2017). Outer-membrane-proteins OmpU/T split associated with altered drug-resistance; hyper-virulence in epidemic strains of *V. cholerae* (Kumar et al., 2019). Contributed in high-throughput diagnosis of SARS-CoV-2 and viral genomics during the early phase of COVID-19 pandemic in India (Kumar et al., 2020; Singh et al., 2020).

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**media-coverage for SARS-CoV-2 diagnosis**