

Template Format for NICPR Scientific Staff Information

Name: Dr. Pramod Kumar

Designation: Scientist C

Division/Department: Molecular Biology

Educational Qualification: PhD



Work Experience:

1. **Scientist 'C'** (May 2020 onwards), ICMR-NICPR, Noida
2. **Assistant Director** (Molecular Biology) May 2019 to April 2020:
National Centre for Disease Control, Delhi-110054
3. **Scientist-III**, (September-2017 to May 2019)
Reproductive Biology, All India Institute of Medical Sciences, New Delhi-110029
4. **CISR-Pool Scientist** (April-2015 to September-2017)
Microbiology, National Centre for Disease Control, Delhi-110054
5. **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.

Membership of Professional Societies:

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

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

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:

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

- **CSIR-Senior Research Associateship (Pool Scientist)**, CSIR, 2015-2017

- **DS-Kothari Post-Doctoral Fellowship**, University Grant Commission (UGC), India 2011-2014
- **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

Publications:

1. Jadaun P, Seniya C, Pal SK, Kumar S, **Kumar P**, Nema V, Kulkarni SS and Mukherjee A. Elucidation of antiviral and antioxidant potential of C-Phycocyanin against HIV-1 infection through *in silico* and *in vitro* approaches. *antioxidants*. Accepted (Ms ID: 1918372) IF=7.765
2. **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
3. Dhingra A, Sharma D, Kumar A, Singh S, **Kumar P***. 2022. Microbiome and Development of Ovarian Cancer. *Endocrine, Metabolic & Immune Disorders - Drug Targets*. Accepted. Manuscript ID: BMS-EMIDDT-2021-212 IF=2.387
4. Singh 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*. Accepted. Manuscript ID: 858555 IF=6.064
5. 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
6. 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
7. 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.
8. **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
9. **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
10. 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**

11. 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**
12. **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= 2.06
13. **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**
14. 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- β 1 induced epithelial to mesenchymal transition and influences cytoskeletal reorganization. *Biochim Biophys Acta-Molecular Cell Research*. 1865(1):67-75. **IF =5.011**
15. 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**
16. 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**
17. 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**
18. 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**
19. 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
20. **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**
21. **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**
22. Jaiswal R, **Kumar P**, Yadava PK (2013). Telomerase and its extracurricular activities. *Cellular and Molecular Biology Letters*. 18(4): 538-554. **IF=8.702**
23. **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**
24. **Kumar P**, Mahor P, Goel AK, Kamboj DV and Kumar O (2011). Aero-microbiological study on distribution pattern of bacteria and fungi during weekdays at two different locations in urban atmosphere of Gwalior, Central India. *Scientific Research and Essays*. 6(25):5435-5441.

25. **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=2.472**
26. 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
27. 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**
28. 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
29. 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**
30. 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**
31. 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**
32. 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**
33. 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 14th, March, 2020.

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

Projects:

Ongoing

1. Title: Immune response to precautionary third dose of COVISHIELD/COVAXIN among healthy adult population: an ICMR Cohort study, India
Funding: ICMR, India
Role: Site **PI**
2. Title: In vitro evaluation of effects of electromagnetic field (EMF) on male reproductive

health
Funding: ICMR, India
Role: Co-investigator

Completed

1. **Title:** Performance evaluation of a CRISPR-Cas9 based diagnosis Kit developed by CSIR, India for SARS-CoV-2 in COVID-19.
Funding: (Intramural, National Centre for Disease Control, India)
Role: Co-I
Duration: 2020-2021
2. **Title:** Molecular insights into emerging drug resistance in *Vibrio cholerae*
Funding: Defence Research and Development Organization, India
Role: Co-I
Duration: 2015-2017
3. **Title:** In vitro screening of Chhattisgarh based herbs for countering diarrhea with special emphasis on cholera
Funding: Chhattisgarh Council of Science & Technology, Raipur
Role: Co-I
Duration: 2013-2015

Brief Biosketch:

statement: I have experience in development of molecular diagnostics for selected bacterial pathogens (*Bacillus anthracis*, *Vibrio cholerae*, *Staphylococcus* spp 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 (For reference to media coverage link)