Dr.Kumar Perumal
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Google Scholar: https://scholar.google.com/citations?user=VcFY574AAAAJ&hl=en

PhD slots available: 2

Personal Profile:

Biotechnologist expertized in the field of genomics and molecular biology, working on whole genome sequencing of drug-resistant organisms and disease surveillance from an one health perspective under SDG14 and SDG3, spanning across environmental and clinical settings. We are into functional metagenomics analysis of microbial communities.

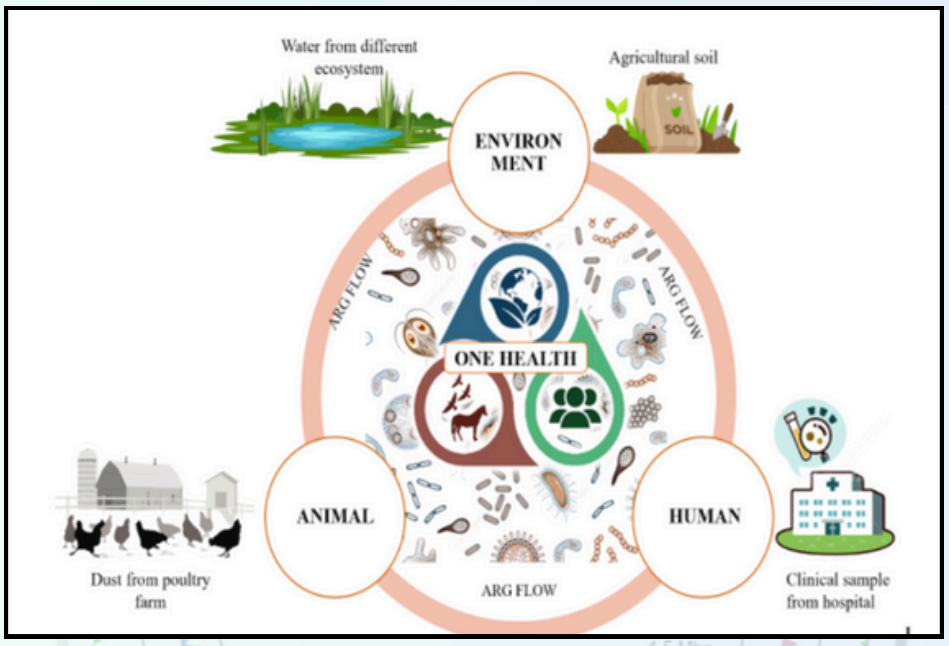
We are the first to report several ST types, such as ST410 from UTI, ST361 and ST69 from wetlands in India, and several others. We have also found novel ST types in our lab. We have also worked on the genomics of probiotic species such as Bacillus subtilis. A Indian patent was filed under the title "A method for detecting Banana Bunchy Top Virus (BBTV). This developed method could detect the virus at low concentration (1 pg/ µl) utilizing functionalized gold nanoparticles. (Date of filing of Application: 13/05/2013) (Publication Date: 25/12/2015) (Award date: 09/12/2020)

My field expertise, along with trained research personnel from my lab, and the work done in my lab would be of great assistance in combating the global antimicrobial resistance problem.

Research Interests:

Major Research interests:

- The antimicrobial resistance of the **Escherichia coli** at the genome level through a genomics approach.
- In silico genome mining of potential biosynthetic gene clusters (BGCs) of soil organisms for drug discovery/ probiotics



ONE HEALTH APPROACH

Lab Members

1. Rogith P (PhD Research Scholar)
2. Lakshmi Srijith (PhD Research Scholar)
3. Gayathri S (PhD Research Scholar)

Projects Completed:

GATE

"Evaluation and selection of lipopeptides from Bacillus spp. based on antimicrobial activity against predominant organisms in diabetic foot ulcers"

Recent Publications:

- Sivarajan, V., Mudaliar, Y., Nagaraj, P., Natarajan Balakrishnan, M. R., Manikandan, N., Sree, K., Raj, M., Jothiraj, M., & Perumal, K. (2024). The Prevalence of Multidrug-Resistant in Chennai and Whole Genome Sequence Analysis of Carbapenem-Resistant ST410. Indian Journal of Microbiology, 64(2), 467–474.
- Mudaliar, Y., Kalaikumari S, S., M, N., N B, M. R., Raj, M., J, M., Elangovan, E., & Perumal, K. (2024). Draft genome sequence of NDM-5, CMY-42 carrying carbapenem-resistant. Microbiology Resource Announcements, 13(1), e0063823.
- Kumar, H. K. S., Gopikrishna, T., Tapasya, K., Perumal, K., & Elavarashi, E. (2023). A COMPUTATIONAL GENOME ANALYSIS OF STRAIN BACILLUS SUBTILIS MIZ-8 ISOLATED FROM BEKANG REVEALS A DISTINCT CHROMOSOME AND PLASMID CONFERRING SELECTIVE ADVANTAGE. Journal of Microbiology, Biotechnology and Food Sciences, 13(2), e9141–e9141.
- Mudaliar, Y., Ahmed, A. S., K P, N., Raj, M., J, M., Elangovan, E., & Perumal, K. (2022). Genomic Features of High-Level Gentamicin-Resistant Enterococcus faecalis Strain LREF-1 from India. Microbiology Resource Announcements, 11(6), e0118721.
- Gopikrishna, T., Suresh Kumar, H. K., Perumal, K., & Elangovan, E. (2021). Impact of Bacillus in fermented soybean foods on human health. Annals of Microbiology, 71(1), 1–16.
- Pramod, S., Thommana, R. T., Kulanthaivelu Kanagam, H., Suresh Kumar, A., S, S. K., Elangovan, E., & Perumal, K. (2021). Data on the genome of A1- Midalam from beach soil. Data in Brief, 39, 107552.
- Elavarashi E, Kindo AJ, Kumar P. Optimization of keratinase production by dermatophytes using poultry feathers in-vitro. Asian. Jr. of Microbial Biotech. Env. Sc. 2018; 20(4): 1195.
- Kumar, P., Arun, V., & Lokeswari, T. S. (2017). Cloning of BBTV (Banana Bunchy Top Virus) components and screening of BBTV using functionalized gold nanoparticles. 3 Biotech, 7(3), 225.
- Shanmugasundaram, D., Perumal, K., Sasikumar, C. S., Cherian, S. M., & Cherian, K. M. Genotoxicity assessment of antidiabetic formulation (ADPHF6) in human lymphocytes by single cell gel electrophoresis (comet assay)-an in vitro study.

- A method for detecting Banana bunchy top virus (Patent)
  Application number: 2117/CHE/2013,
  Publication date: 25/12/2015,
  Award date: 09/12/2020

International Poster presentation

Shanmugasundaram D, Perumal K, Sasikumar CS, Cherian SM and Cherian KM (2015). Genotoxicity assessment of antidiabetic formulation (ADPHF6) in human lymphocytes by single cell gel electrophoresis (comet assay) - an in vitro study.**Front. Genet. Conference Abstract: ICAW 2015-**11th International Comet Assay Workshop VITO (Flemish Institute for Technological Research) Industriezone Vlasmeer 7 2400 Mol, Belgium, 01 Sep 2015- 04 Sep 2015. doi: 10.3389/conf.fgene.2015.01.00069.

Recognitions/ International Travel grant

- Received "International travel grant to attend "International workshop on Protein expression and Purification strategies at "Chulalongkorn University", Bangkok, Thailand
- Recipient of Dr. Sergio G. Litewka Award for obtaining Indian Patent - Awarded by Sri Ramachandra Institute of Higher Education and Research (Deemed to be University), Chennai