



**Information and Networking Event
Horizon Europe 2023 Calls
Co-Funded by the Government of India
(DBT)**



HORIZON-HLTH-2024-DISEASE-08-20: Pandemic preparedness and response: Host-pathogen interactions of infectious diseases with epidemic potential

Friday, 13 October 2023

- **TITLE of talk: Resources for vaccine and antiviral research at the Viral BSI3, CIDR, IISc, India.**
- **Name of presenter: Shashank Tripathi**
- **Name of Organisation: Centre for Infectious Diseases Research, Indian Institute of Science, Bangalore**
- **Country: India**
- **Your contact details: Email: shashankt@iisc.ac.in Tel: +91-80-2293-2284**
- **Your web URL: <https://cidr.iisc.ac.in/shashank/>**



**Centre for
Infectious Disease Research**
Indian Institute of Science - Bengaluru

Viral BSL-3 Facility

National Centre for Preclinical evaluation of COVID-19 Vaccines

Pathogens

- SARS-CoV-2 VOCs
- Influenza A Viruses (Human, Avian)
- Flaviviruses (Dengue, Zika, JEV, WNV)

Model systems

- Cell Culture Models
- Lung primary cells and organoids
- **Animal BSL3** (Syrian Hamsters, Mice)

Instruments available

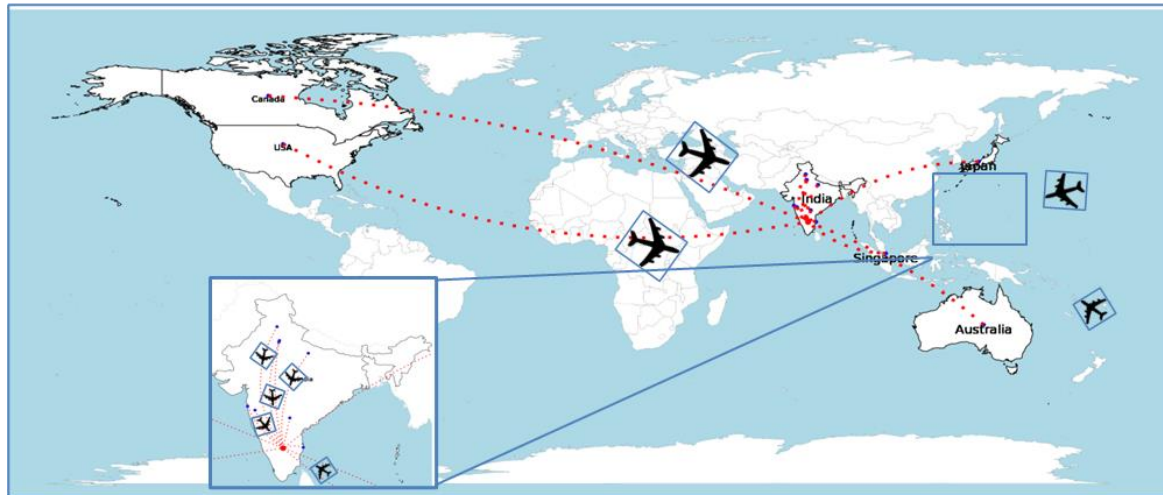
- High Content Screening Platform
- FACS-Sorting Platform
- Viral genomics
- Histopathology Core

Types of Studies

- Vaccine Efficacy studies
- Antiviral Testing studies
- Materials and Device Testing



**International
Clients**



**Indian
Clients**





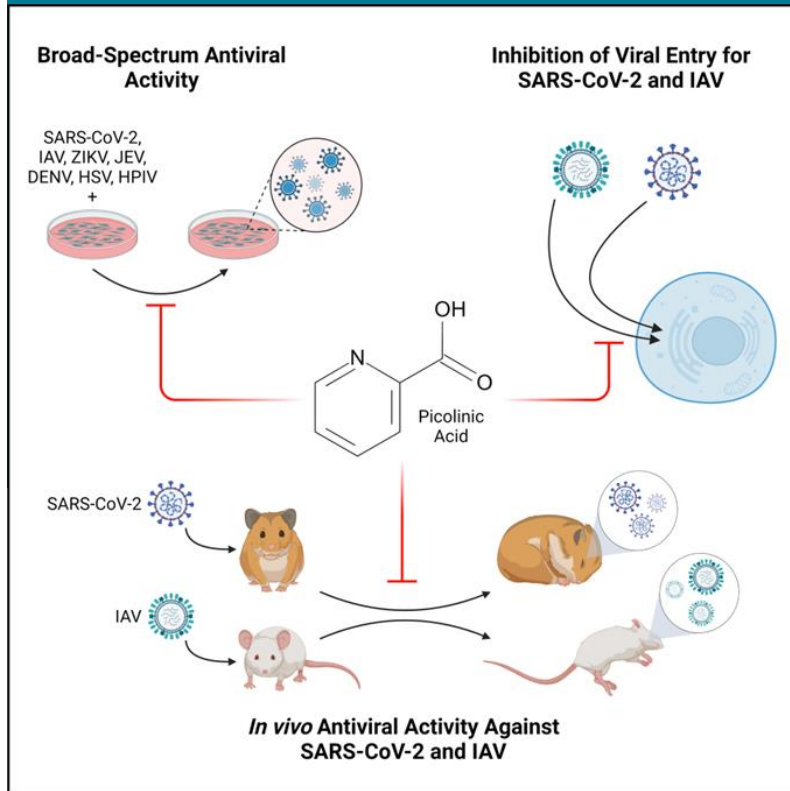
EMERGING VIRAL
PATHOGENS
LABORATORY

- **Respiratory Viruses** (Influenza, Coronaviruses)
- **Mosquito-Borne Viruses** (Dengue, Zika, JEV, WNV)
- Virus-Host Interactions, **Antiviral & Vaccines**
- Viral Cell culture and animal models
- **Preclinical Efficacy Studies**
- Viral genomics and Evolution
- Lung Organoid models

- Part of **ENDFLU** Indo-Euro Consortium for developing broadly protective Influenza A virus vaccines

Research Highlights

Research Highlight #1

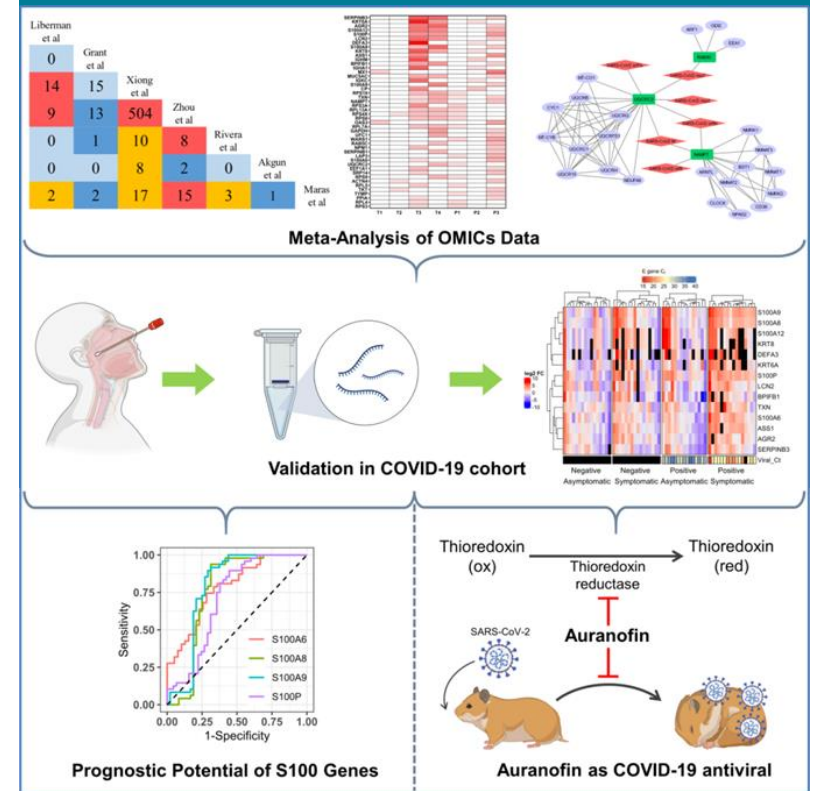


Graphical Abstract

Narayan et.al, Cell Reports Medicine 2023

Discovery of Picolinic Acid as a Broad-Spectrum antiviral against enveloped viruses including Influenza, SARS-CoV-2 and Flaviviruses.

Research Highlight #2



Graphical Abstract

Biji et.al, EBiomedicine 2021

Discovery of nasal swab-based Prognostic Signature of COVID-19 and FDA-approved antiviral against SARS-CoV-2.

Selected Publications

- *“Picolinic Acid is a broad-spectrum inhibitor of enveloped virus entry that restricts SARS-CoV-2 and Influenza A Virus in vivo.”* Rohan Narayan,Shashank Tripathi. **Cell Reports Medicine**, (2023).
- *“Enhanced recombination among Omicron subvariants of SARS-CoV-2 contributes to viral immune escape.”* Rishad Shiraz, Shashank Tripathi. **Journal of Medical Virology**, (2023).
- *“Efficient Elimination of Airborne Pathogens: A Study on aerosolized Mycobacterium tuberculosis and SARS-CoV-2 using ZeBox Technology.”* Rohan Narayan.... Shashank Tripathi, and Santanu Datta. **Journal of Hospital Infection** (2022).
- *“Drug targeting Nsp1-ribosomal complex shows antiviral activity against SARS-CoV-2.”* Afsar, Mohammad.... Shashank Tripathi, and Tanweer Hussain. **Elife** 11 (2022)
- *“Identification of COVID-19 prognostic markers and therapeutic targets through meta-analysis and validation of Omics data from nasopharyngeal samples”.* Abhijith Biji,Shashank Tripathi. **EBioMedicine**, (2021)
- *“A stabilized, monomeric, Receptor Binding Domain elicits high-titer neutralizing antibodies against all SARS-CoV-2 variants of concern”.* Shahbaz Ahmed, ...Raghavan Varadarajan. **Frontiers in Immunology** (2021).
- *“Restriction factor compendium for influenza A virus reveals a mechanism for evasion of autophagy”.* Laura Martin-Sancho, Shashank Tripathi...Sumit K Chanda. **Nature Microbiology**. (2021)

Contact details

Shashank Tripathi

Faculty In-Charge, Viral BSL3 facility, Centre for Infectious Diseases Research

<https://cidr.iisc.ac.in/viral-bsl-3-2/>

Head, Emerging Viral Pathogens Lab, Centre for Infectious Diseases Research

<https://cidr.iisc.ac.in/shashank/>

Assistant Professor, Microbiology and Cell Biology

<https://mcb.iisc.ac.in/shashank-tripathi/>

Indian Institute of Science, Bangalore, India

(Academic Institution, Govt. Funded)

<https://iisc.ac.in/>

shashankt@iisc.ac.in Tel: +91-80-2293-2284