Infectious Diseases Labs

A*STAR IDL

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Friday 10th Oct 2025
12:00 PM to 1:00 PM (SGT)

Venue: Codon A & B, Matrix Level 5

Understanding emerging bat coronaviruses: SARS-CoV-2's relatives emerge from the bat cave

SARS-like betacoronaviruses (sarbecoviruses) endemic in bats pose a significant zoonotic threat to humans. Genetic pathways associated with spillover of bat sarbecoviruses into humans are incompletely understood. I will discuss recent work in which we show that many bat sarbecovirus spikes are conformationally constrained in a manner that reflects viral optimizations for a fecal-oral lifestyle and immune evasion in their natural hosts. Our work suggests that this 'tuning' represents a substantial barrier to viral spillover, but one that could potentially be overcome by substitutions that promote virus-receptor binding and entry without altering spike cleavage.

The Chandran Lab focuses on understanding the molecular warfare between diverse emerging enveloped viruses and cells and using this knowledge to advance antiviral countermeasures and enhance pandemic preparedness. Our key accomplishments include the discovery of a novel Ebola entry mechanism; critical entry receptors for emerging enveloped viruses; and the leadership of two NIH-funded international consortia for emerging virus countermeasures, Prometheus and PROVIDENT. Kartik received his Ph.D. at the University of Wisconsin, Madison and was a research fellow at Harvard Medical School in Boston before starting his group at Einstein.

Hosted by: Prof Marco Vignuzzi

Seminar is open to all. No registration required.

Questions? Contact us at **seminars@idlabs.a-star.edu.sg**

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