

NCID MONTHLY RESEARCH MEETING

*BRINGING PEOPLE TOGETHER,
BRIDGING SCIENCE AND MEDICINE*

18 Aug 2023 | Friday | 11.00am – 12.00pm

About the Meeting

Our research meetings are held every 3rd Friday of the month, with the aim to:

- Inspire research ideas and participation
- Provide guidance on research studies
- Foster research collaborations

Who Should Attend

All who are interested in research are welcome to attend.

Programme

11:00 AM Differential Mucosal Tropism and Dissemination of Classical and Hypervirulent *Klebsiella pneumonia* Infection

Dr Teo Teck Hui

Investigator

A*STAR Infectious Diseases Labs (ID Labs)



11:30 AM Targeting Neurotransmitter Signalling Pathways as Novel Immunotherapeutic Options Against Viral Infections

Dr Lum Fok Moon

Investigator

A*STAR Infectious Diseases Labs (ID Labs)



5 to 10 mins Q&A will follow after each talk

To Register

This will be a Zoom meeting.

Click <https://for.sg/aug23researchmeeting> or scan QR code.

*CME/CNE/CPE points will be awarded



Differential Mucosal Tropism and Dissemination of Classical and Hypervirulent *Klebsiella pneumonia* Infection

by **Dr Teo Teck Hui**

Investigator

A*STAR Infectious Diseases Labs (ID Labs)

Klebsiella pneumonia (Kp) infection is an important healthcare concern. The ST258 classical (c)Kp strain is dominant in hospital-acquired infections (HAIs) in North America and Europe, while ST23 hypervirulent (Hv)Kp prevails in community-acquired infections in Asia. In this talk, I will present the mucosal Kp infection models that were newly established using these clinically relevant Kp sequence types. Bacterial tropism and airway pathology will be used as a basis for elucidating the role of nasal cavity, lungs, and the gastrointestinal tract (GI) for the establishment of lethal infection or chronic colonization by Kp.

Learning Points

1. Early infection of the nasal cavity enable downstream lung and gut infection by classical Kp.
 2. cKp induce disseminated inflammation in the lungs while HvKp induce necrotic foci to enable lethal spread of bacteria into the mediastinum region.
 3. HvKp and cKp replicate to high titer in different parts of the GI Tract.
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Targeting Neurotransmitter Signalling Pathways as Novel Immunotherapeutic Options Against Viral Infections

by **Dr Lum Fok Moon**

Investigator

A*STAR Infectious Diseases Labs (ID Labs)

Arthropod-borne viral infection have always been a major public health threat, with outbreaks of chikungunya, dengue and Zika increasing in frequency and scale. Neurotransmitters are the body's chemical messengers, often used by the nervous system for communication between neurons, or from neurons to muscles. Over the years, it has become clear that neurotransmitters operate more than just in the nervous system. As part of the neuroimmune circuitry, neurotransmitters are also capable of interacting with immune cells resulting in modulation of their functions during disease settings.

In this seminar, I will share how I attempt to study the interplay between neurotransmitters and host immunity using the well-characterized murine model of chikungunya virus (CHIKV), and how their intriguing relationships can be further exploited as potential novel immunotherapies.

Learning Points

1. Chikungunya disease is driven by the pathogenic immune-crosstalk between CD4+ T cells and CD64+ macrophages.
2. High levels of blood glutamate is detected during peak CHIKV infection.
3. Glutamate affects the activities of macrophages and T cells.