



Infectious
Diseases Labs

ID LABS



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Tuesday 30th July 2024

10:00 AM to 11:00 AM (SGT)

Venue: Curiosity meeting room,
ID Labs, Immunos Level 5

ISG15 Emerges as a Novel Pro-Viral Mediator of EBV Transformation

Epstein-Barr virus (EBV) is a common herpesvirus that infects nearly all adults worldwide. The infectious cycle involves salivary transmission, amplification in oral epithelium, and latency establishment in B lymphocytes from which reactivation also occurs periodically. This cycle is kept in check by the adaptive immune response, but loss of control can enable EBV to promote cancer. In vitro, EBV immortalizes primary human B cells into lymphoblastoid cell lines. Our laboratory studies the virus/host interactions required for this process and, in recent years, our focus has been on the heterogeneity of infection outcomes at the single cell level. In this talk, I will discuss new host factors that regulate EBV infection with a focus on a newly appreciated role for ISG15 in EBV transformation as a suppressor of type I interferon signaling.

The Luftig laboratory studies viruses that cause cancer with an overarching goal of defining the basic molecular mechanisms underlying pathogenesis and leveraging these findings for diagnostic value and therapeutic intervention. Our work primarily focuses on the common herpesvirus, Epstein-Barr virus (EBV). Overall, EBV contributes to approximately 2% of all human cancers worldwide leading to nearly 200,000 deaths annually. We use cutting-edge, cross-disciplinary and highly collaborative approaches to characterize the temporal dynamics and single cell heterogeneity of EBV infection. With these strategies, we aim to discover fundamental molecular circuits underlying transcriptional control, viral manipulation of host signaling pathways, and metabolic regulation that collectively influence infected cell fate decisions. By understanding the nature of viral control of infected host cells, we are also well positioned to discover vulnerabilities in EBV-associated diseases and characterize new therapeutic interventions in cell-based and pre-clinical animal models.

Hosted by: Dr Matthew Tay

Seminar is open to all. No registration required.

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

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