

Seminar Announcement

Towards an understanding of the role that the influenza virus polymerase proteins play in mediating virus transmission.

Date: 03 June 2016 Friday

Time: 4pm

Venue: Classroom 1, SBS



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Abstract

The influenza A virus is a major global health concern responsible for a high level of morbidity and mortality. There are currently limited antiviral treatments, and the emergence of antiviral drug-resistance is a major problem. A better understanding of the biology of influenza virus biology, in particular the mechanism of virus transmission, should pave the way for novel anti-viral strategies.

Although receptor binding is an important factor in the initial stages of virus transmission, the activity of the virus polymerase is a major factor in the maintenance of the virus in a new host. The influenza virus polymerase complex consists of the PA, PB1 and PB2 proteins, and each protein possesses distinct biochemical properties. The fully functional polymerase complex requires all the activities that are associated with the individual polymerase proteins. The polymerase complex is also part of a larger independent transcriptional unit called the ribonucleoprotein (RNP) complex, which is formed by an interaction between the virus genome (vRNA) and the virus NP protein. It is postulated that the capacity of the virus polymerase proteins to function efficiently in a new cell environment involves the interaction of the RNP complex with specific cellular factors. However in most cases these cell factors are species specific but poorly defined. In this context several avian and human influenza viruses have been isolated in Singapore and our work on understanding how the polymerase proteins may influence the transmission of representative viruses in our collection will be described.