



BIOLOGY COLLOQUIUM

Friday, 20 April 2018 | 4pm | DBS Conference Room 1

Hosted by Dr Lu Gan



Mechanism of cellular recognition and entry by porcine circovirus 2

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Swine pathogens are known to infect and inflict their pathogenic phenotype in humans. Porcine circovirus 2 (PCV2) is a non-enveloped immunosuppressive virus responsible for eradicating swine farms. PCV2 is promiscuous in that it infects and destroys nearly every tissue and organ within its natural host, infects multiple animal species, and is capable of infecting and replicating in human cells in culture –properties that give PCV2 the propensity of becoming zoonotic. PCV2 is also a deterrent to xenotransplantation. Xenotransplantation from swine to human is becoming increasingly attractive due to the shortage of organs from human donors. Understanding the detailed mechanisms by which PCV2 interacts with its cellular hosts is of significant importance for the development of therapeutics to intervene with PCV2 infection. Moreover, PCV2 is the smallest pathogenic virus and thus provides the opportunity to understand the minimal components needed by an autonomously replicating virus. The presentation discusses the biochemical and structural mechanisms by which PCV2 recognizes and attaches to the cell, and acquires entry following endocytosis.