

SEMINAR ANNOUNCEMENT

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A Genetic Basis for Cancer Immune Evasion

Date: Friday, 1 December 2017

Time: 10.30am – 11.30am

Venue: L1 Auditorium, Clinical Research Centre (MD11)
(10 Medical Drive, Singapore 117597)

Chair: Dr Tam Wai Leong

Abstract:

Immune evasion is an emerging hallmark of cancer, and many new cancer therapies target a tumor's ability to hide from immune surveillance. However, the molecular mechanisms for how cancers activate immune evasion pathways remain underexplored. Through analyses of large-scale cancer patient RNA-seq datasets, we find that the cancer-specific reactivation of DUX4 across many solid cancer types is associated with downregulation of cellular immunity pathways and reduced immune cell infiltration. As a transcription factor, DUX4 induces similar genes in solid cancers and its endogenous context of pre-implantation development, suggesting a consistent immunosuppressive role for DUX4 in early development. I will also discuss the molecular activity of DUX4-fusions and insight into its oncogenicity in a recurrent subtype of B-cell acute lymphoblastic leukemia.

Biosketch:

Dr Chew is a postdoctoral fellow in the Bradley Lab at the Fred Hutchinson Cancer Research Center. He is currently investigating the RNA-mediated mechanisms of disease, including in muscular dystrophy and cancer, using a combination of experimental and large-scale computational approaches. He trained with Alex Schier at Harvard University for his graduate work (receiving his Ph.D. in Biochemistry in 2015), where he investigated non-canonical translation and its gene regulatory effects on long non-coding RNAs and upstream open reading frames. He also worked with Hidde Ploegh at the Whitehead Institute during his undergraduate studies at the Massachusetts Institute of Technology (receiving a B.S. in Biology in 2010), where he developed technique for Sortase-mediated peptide ligation to dual-label and circularize proteins.