



HARRY PERKINS INSTITUTE
OF MEDICAL RESEARCH



PERKINS Seminar Series

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THURSDAY 23 MARCH



Professor Chng Wee Joo

Director, National University Cancer Institute
Deputy Director & Senior Principal Investigator,
Cancer Science Institute of Singapore

"Global genomic profiling in multiple myeloma"

Professor Chng Wee Joo's research focus is on the use of global genomics methods (microarray and sequencing platforms) to study the clinical and biological heterogeneity in haematologic malignancies including acute myeloid leukaemia, multiple myeloma and lymphoma. Using these methods, he has identified novel prognostic markers as well as molecular abnormalities in these malignancies that provide insights into disease pathogenesis and biology and serve as potential targets for therapy. This serves as an experimental therapeutic platform to also study new drugs in these diseases and their mechanism of action and resistance.

The Haematological Malignancy Genomics Laboratory operates a comprehensive translational research program in haematological malignancies with focus on **multiple myeloma (MM)**, **acute myeloid leukemias (AML)** and **natural killer / T-cell Lymphoma (NKTL)**. At the core of this program is the use of high-throughput cutting edge genomics and proteomics techniques in human tumor samples and model system to make clinically relevant discoveries. These discoveries will encompass novel biological insights, identification of new diagnostic subtypes, prognostic factors, therapeutic targets, and aspects of molecular epidemiology and pharmacogenomics, all with potential impact on patient care. In this bench-to-bedside translational pipeline, discoveries are validated in the pre-clinical setting before clinical validation. The program will be supported by a comprehensive tissue bank that provides high-quality source materials for down-stream study, and a clinical database that is connected by a relational database for integrated system biology analysis (See Figure Below). In MM, we are focused on identifying the pathways leading to disease progression. In this regards, we have constructed step-wise pathways of progression for MM and is using this as a framework to design therapeutic intervention strategy. At the same time, we are using genomics to dissect the molecular heterogeneity of the disease. This has yielded robust genetic subtypes. We are now focusing on rationally targeting high-risk subtypes based on the underlying genomic aberrations and molecular defect. In AML, we have been working on mechanisms mediating therapeutic resistance in FLT3 positive AML, and in the process have identified novel molecules that play a fundamental role in leukemogenesis and may represent novel therapeutic targets. In addition, we are also testing novel compounds targeting EZH2, an oncogenic histone modifier, and has unraveled interesting biology in AML so far. In NKTL, we are using genomics to understand key molecular event mediating pathophysiology. Till now, we have identified key pathways that are activated and showed that most of these pathway activation is due to downregulation of regulating miRNAs. The downregulation of these miRNA are mediated by EBV infection or MYC activation. We also identified certain markers that are universally over-expressed in NKTL and may serve as novel therapeutic targets.

1:00pm till 2:00pm
followed by a light lunch

For more information please contact Professor Alistair Forrest

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MCCUSKER AUDITORIUM, HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH, NORTH CAMPUS

Aberdare Rd

To Perth

A

Your Guide to the



HARRY PERKINS INSTITUTE OF MEDICAL RESEARCH

B

C

D

E

F

Compu St

Verdun St

Kingston St

Gairdner Dr

Hospital Ave

Winthrop Ave

Child Care

Under Construction

Under Construction

Lions Eye Inst

HARRY PERKINS INSTITUTE

PathWest

Hollywood Private Hospital



Visitor Car Park 3A

Western Power Sub Station

Staff Car Park 3

Car Park 7B

Staff Car Park 7A

UWA Car Park

Visitor Car Park 7 8.00am - 4.00pm

Under Construction (New Children's Hospital)

To Stirling Hwy



Kings Park