NUS National University of Singapore | Department of Biological Sciences
Faculty of Science

SEMINAR

Wed, 24 Feb 2021 | 9 am | Online Zoom Session

Hosted by Prof J Sivaraman

Hippo-YAP/TAZ signalling in development and disease

Join Zoom Meeting | LINK
Meeting ID: 850 3428 3146
Meeting Password: 781066

By **Barry THOMPSON**

Full Professor & EMBL Australia Group Leader,
The Australian National University (ANU), Canberra, Australia

Our lab contributed to the discovery of the Hippo signalling pathway in Drosophila, and to understanding the physiological regulation of this pathway by apical-basal polarity, mechanical strain and growth factor signalling in both Drosophila and mammals. The Hippo pathway acts by inhibiting the nuclear localisation of two key transcriptional activators Yes-associated protein (YAP) and Transcriptional activator with a PDZ domain (TAZ), which bind to TEAD-family DNA binding transcription factors to induce nuclear gene transcription. YAP and TAZ relocalise from the cytoplasm to the nucleus in response to mechanical cues and various other stimuli including growth factor signals. During normal development of the embryo, YAP and TAZ are strongly nuclear localised and yap/taz double knockout mice arrest at early embryogenesis. Conditional knockouts of yap/taz in specific embryonic tissues, such as cartilage, allows development to birth, but leads to specific birth defects including skeletal malformations and cleft palate. Conditional knockouts of yap/taz in adult tissues, such as skin and intestine, reveal a fundamental role in stem cell maintenance and the regenerative response to tissue damage, including DNA damage. Conditional activation of YAP/TAZ with inducible YAP transgenes or by conditional knockout of the core Hippo pathway kinases LATS1 and LATS2 are sufficient to drive inflammation and a chronic regenerative response in both skin and intestine. YAP and TAZ become strongly nuclear localised in a wide variety of human cancers, particularly in those that progress to invasion and metastasis. We wish to characterise the molecular mechanisms by which mechanical and other signalling inputs regulate Hippo-YAP/TAZ in normal development, regeneration, and in cancer. We are particularly interested in role of YAP/TAZ activation in regulating the immune infiltrate during both tissue regeneration and cancer, with a view to developing new drugs to enhance immunotherapy.

Virtual Seminar Etiquette:

- ✓ Please "mute" upon arrival into the meeting room.
- ✓ Questions can be asked after the presentation. You are encouraged to verbally ask questions or submit your questions via chat group.
- ✓ By being present at this meeting, **information presented is a privilege** and you agree that you would **NOT UNDERTAKE** any forms of recording/photo-taking.