The Goodman Cancer Research Centre Seminar Series 2016-17

Invited Seminar Speaker

Wednesday, June 28, 2017
4:00 PM – 5:00 PM
McIntyre Medical Building
Meakins Theatre, Room 521

Associate Professor Jody Jonathan Haigh

Australian Centre for Blood Disease (ACBD)

Monash University-Melbourne, Australia

Novel Roles of EMT Transcription Factors in Hematopoiesis and Leukaemia

Transcription factors of the ZEB (Zeb1/2) and SNAI (SNAI1-3) family have previously been demonstrated to be important modulators of the epithelial to mesenchymal transition (EMT) process whereby they down regulate key epithelial adhesion genes such as E-cadherin and up regulate mesenchymal gene expression programs. The EMT process is essential during developmental processes such as during gastrulation and mesoderm formation as well as neural crest development and migration. Deregulated EMT transcription factor (EMT-TF) activity has been implication in pathological processes including tissue fibrosis as well as the metastatic spread of solid tumours and the acquisition of cancer stem cell properties. My group was the first to demonstrate key roles of Zeb2 in normal developmental hematopoiesis[1] as well as leukemic transformation[2]. This talk will focus on the role of ZEB2 and SNAI1 in the leukemic transformation of the T cell and myeloid cell lineages. Mechanistically, we have found that ZEB2/SNAI1 can interact with and corrupt key epigenetic modulators including the lysine specific demethylase-1 (LSD1/KDM1A)[3] as well as key signalling pathways including the IL7-receptor pathway in T-ALL and the TNFα/NFκβ pathway in AML that contributes to leukaemia initiation and survival. The results from these studies have identified some key epigenetic and genetic targets that can be pharmacologically interrogated in clinical trials to combat aggressive and refractory forms of leukaemia. This work is also directly relevant for inhibiting solid tumour metastasis and targeting cancer stem cells.

1-Goossens et al., *Blood*, 2011, **2**-Goossens et al., *Nature Communications*, 2015, **3**-Goossens et al., *Blood* 2017

STUDENTS: If you would like to attend a lunch with Dr. Haigh, please send an email to: leah.donnelly@mcgill.ca

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