BDR SEMINAR in Kobe

"CDB SEMINAR" and "QBiC SEMINAR" have been renamed "BDR SEMINAR".

Tristan Rodriguez

National Heart and Lung Institute, Imperial College London

Monday, December 3, 2018

15:00-16:00, Auditorium, DB Building C

Regulation of cell fitness by cell competition during early mouse development

Summary

We study the cell non-autonomous mechanisms that regulate cell fitness. The focus is on cell competition, a quality control mechanism that allows the comparison of fitness levels between cells and results in the elimination of those cells that are less fit than their neighbours, even though they may be viable in a different context. An important implication of our work is that cellular fitness is not only a cell-intrinsic property, but is also determined relative to the fitness of neighbouring cells– a cell that is of sub-optimal fitness in one context may be 'super- fit' in the context of a different cell population. We analyze the mechanisms by which cell fitness is measured between cells and the pathways that respond to this fitness sensing by promoting apoptosis in the less-fit cell type or proliferation in the fitter cell. We also study the importance of cell competition in disease. For example the importance that cell competition has in the expansion of cancer cells. For this we study how transformed cells such as glioblastoma stem cells use cell competition to eliminate their un-transformed neighbours as a mechanism to expand within the neural stem cell niche.

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