CDB SEMINAR

Philippe Collas

University of Oslo, Institute of Basic Medical Sciences

Thursday, October 25, 2007
16:00~17:00 C1F Auditorium

Epigenetic programming of mesenchymal stem cells

Summary

Stem cells can self-renew and give rise to multiple cell types. Somatic stem cells are found in many adult tissues, have an extensive but finite life-span and can differentiate into a more restricted array of cell types than ES cells. A growing body of evidence indicates that multilineage differentiation ability of stem cells can be defined by the potential for expression of lineage-specification genes. This potential for expression seems to be largely controlled by epigenetic modifications of DNA and chromatin on genomic regulatory and coding regions. We will review how mechanisms by which genes are poised for transcription in undifferentiated stem cells are being uncovered through the mapping of DNA methylation, histone modifications and transcription factor binding throughout the genome. Our work on stem cells from human adipose tissue argues that combinatorial association of epigenetic marks on lineage-specifying genes in undifferentiated cells may define a pluripotent state.

Host:
Teruhiko Wakayama
Genomic Reprogramming, CDB
teru@cdb.riken.jp
Tel:078-306-3049 (ext:4403)