DIPARTIMENTO DI FARMACIA E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno martedì **29 Ottobre 2019**
alle ore **14:30**
presso Aula 1, via Belmeloro 6, Bologna

Prof.ssa Elisa Laurenti, Ph.D.

Sir Henry Dale Fellow - Group Leader
Wellcome Trust - Medical Research Council Cambridge Stem Cell Institute
Centre for Haematopoiesis and Leukemia Research - Department of Haematology - University of Cambridge, UK
(ospite Prof. Perini)

terrà un seminario dal titolo:

FUNCTIONAL DIVERSITY WITHIN THE HAEMATOPOIETIC STEM CELL COMPARTMENT OVER A HUMAN LIFETIME

Colleghi e studenti sono cordialmente invitati

Commissione Ricerca e Attività Correlate - FaBiT

ABSTRACT

Life-long production of all blood cell types originates from a dynamic equilibrium between single haematopoietic stem cells (HSC) with specific behaviours. Studies predominantly in mouse models have indicated that this equilibrium evolves over a lifetime in response to stresses and accumulating mutations. However, our understanding of how this occurs at single cell resolution in humans is lagging behind. Our laboratory has developed a pipeline that combines index sorting, single cell differentiation assays and single-cell RNA-seq, with xenotransplantation to link single cell functional behaviours to specific molecular states. Here I will summarise results obtained from this pipeline, identifying novel cellular, functional and molecular properties of the human HSC pool during fetal, neonatal and adult life at steady-state and under stress. Altogether this work shows how changes in the equilibrium of distinct HSC subsets contribute to meet the needs of blood demand over a human lifetime.

BIOGRAPHICAL SKETCH

My career in cell biology has focused on studying haematopoietic stem cells (HSCs) first using mouse models during my PhD with Prof. Andreas Trumpp in Lausanne, then with Dr John Dick in Toronto during my post-doctoral studies. There I established robust methods to study the function and molecular make-up of human HSCs. In 2014, I moved to the Cambridge Stem Cell Institute where I established my own laboratory thanks to a Wellcome – Royal Society Sir Henry Dale Fellowship. My research aims to understand how HSC function is regulated at all stages of human life to eventually improve treatment of blood diseases. More specifically, my laboratory currently focuses on i) understanding how the functional output of the human HSC pool changes over a human lifetime, at steady-state and under inflammatory conditions; ii) characterising the molecular regulation of quiescence and its relevance to HSC ex vivo expansion and gene therapy