



CDB SEMINAR

Heinrich Jasper

Buck Institute for Research on Aging, USA

University of Southern California, USA

Leibniz Institute for Aging Research, Germany

Genentech, Inc.

Monday, November 13, 2017

14:00-15:00 Seminar Room A7F

Age-related Stem Cell Dysfunction: Causes and Consequences

Summary

Proliferation of stem cells has to be carefully controlled to maintain long-term regenerative capacity of high-turnover tissues while preventing cancer. We study barrier epithelia in *Drosophila* and mice as genetically accessible models in which to explore stem cell function. Our work focuses on the regulation of intestinal stem cell (ISC) and tracheal basal cell (BC) proliferation by stress and growth factor signaling. ISCs over-proliferate in aging flies, limiting lifespan. In recent work, we have explored some of the underlying causes of this hyper-proliferative phenotype, and have established a role for age-related immunosenescence and associated commensal dysbiosis in this breakdown of homeostasis. Our findings deepen our understanding of the regulation of proliferative homeostasis in aging barrier epithelia, and suggest potentially conserved mechanisms by which proliferative homeostasis can be preserved in the long term, extending lifespan. I will present recent findings on the regulation of ISC and BC maintenance, on the control of proteostasis in stem cells, and on the impact of this control on age-related tissue dysfunction.

Host:

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