



CDB SEMINAR

Michele Markstein

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Monday, March 13, 2017

17:00-18:00 Seminar Room A7F (Updated: Feb.20)

Viva La Resistance! Multidrug Resistance in Drosophila Stem Cells

Summary

The Markstein lab studies how stem cells interpret and respond to natural and synthetic chemicals in the environment. We recently showed that stem cells proliferate into small masses in response to a subset of chemotherapeutics currently in use in patients, highlighting the clinical importance of understanding the basic biology of how stem cells respond to their chemical environment. This result also demonstrates that stem cells in flies, like in mammals, are largely drug resistant. Our goal is to understand the molecular mechanisms underlying stem cell chemical interactions, in both normal and tumor stem cells.

We do all of our work in vivo, using the intestine of the fruit fly *Drosophila melanogaster* as a model. The fly intestine is a simplified version of our own, with many fewer cells, that nonetheless is composed of similar cell types: multipotent stem cells, absorptive enterocytes, and secretory enteroendocrine cells. We employ chemical and genetic screening, tumor modeling, transgenics, efflux assays, and confocal microscopy.

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