Cell fate and plasticity in the mammary gland

Brief Synopsis

Stem cells ensure tissue development, homeostasis and repair. We have recently developed new methods to study by lineage tracing the cellular hierarchy and clonal dynamics that govern the development and homeostasis of the mammary gland. I will present new studies combining lineage tracing, clonal analysis, lineage ablation, single cell RNA sequencing, chromatin profiling, and functional experiments in vivo to investigate the cellular and molecular mechanisms regulating multipotency and lineage restriction during mammary gland development and the cellular reprogramming occurring after oncogene expression. Defining the mechanisms regulating tissue expansion and cell fate during development and adult regeneration and understanding how these mechanisms are corrupted during tumorigenesis will have important implications for regenerative medicine and cancer therapy.

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