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Article

An Epithelial Niche in the *Drosophila* Ovary Undergoes Long-Range Stem Cell Replacement

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Cell Stem Cell, Volume 1, Issue 3, 13 September 2007, Pages 239-240
 Lilach Gilboa, Ruth Lehmann
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Summary

Adult epithelial stem cells are thought to reside in specific niches, where they are maintained by adhesion to stromal cells and by intercellular signals. In niches that harbor multiple adjacent stem cells, such as those maintaining *Drosophila* germ cells, lost stem cells are replaced by division of neighboring stem cells or reversion of transit cells. We have characterized the *Drosophila* follicle stem cell (FSC) niche as a model of the epithelial niche to learn whether nonneighboring cells can also generate stem cell replacements. Exactly two stroma-free FSC niches holding single FSCs are located in fixed locations on opposite edges of the *Drosophila* ovariole. FSC

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daughters regularly migrate across the width of the ovariole to the other niche before proliferating and contributing to the follicle cell monolayer. Crossmigrating FSC daughters compete with the resident FSC for niche occupancy and are the source of replacement FSCs. The ability of stem cell daughters to target a distant niche and displace its resident stem cell suggests that precancerous mutations might spread from niche to niche within stem cell-based tissues.

Author Keywords: STEMCELL

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