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Title:	Ubx-Collier signaling cascade maintains blood progenitors in the posterior lobes of the Drosophila larval lymph gland
Authors:	Kanwal, Aditya (/jspui/browse?type=author&value=Kanwal%2C+Aditya) Joshi, Pranav Vijay (/jspui/browse?type=author&value=Joshi%2C+Pranav+Vijay) Mandal, Sudip (/jspui/browse?type=author&value=Mandal%2C+Sudip) Mandal, Lolitika (/jspui/browse?type=author&value=Mandal%2C+Lolitika)
Keywords:	Ubx-Collier signaling cascade maintains blood progenitors Drosophila
Issue Date:	2021
Publisher:	Plos Genetics
Citation:	PLoS Genetics, 17(8).
Abstract:	Drosophila larval hematopoiesis occurs in a specialized multi-lobed organ called the lymph gland. Extensive characterization of the organ has provided mechanistic insights into events related to developmental hematopoiesis. Spanning from the thoracic to the abdominal segment of the larvae, this organ comprises a pair of primary, secondary, and tertiary lobes. Much of our understanding arises from the studies on the primary lobe, while the secondary and tertiary lobes have remained mostly unexplored. Previous studies have inferred that these lobes are composed of progenitors that differentiate during pupation; however, the mechanistic basis of this extended progenitor state remains unclear. This study shows that posterior lobe progenitors are maintained by a local signaling center defined by Ubx and Collier in the tertiary lobe. This Ubx zone in the tertiary lobe shares several markers with the niche of the primary lobe. Ubx domain regulates the homeostasis of the posterior lobe progenitors in normal development and an immune-challenged scenario. Our study establishes the lymph gland as a model to tease out how the progenitors interface with the dual niches within an organ during development and disorders.
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