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Anteroposterior Patterning in Adult Abdominal Segments of *Drosophila*Artyom Kopp<sup>a, b</sup> ... Ian Duncan<sup>a, 1</sup>

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## Abstract

The cuticle of the adult abdomen of *Drosophila* is produced by nests of imaginal histoblasts, which proliferate and migrate during metamorphosis to replace the polyploid larval epidermal cells. In this report, we present a detailed description of the expression of four key patterning genes, *engrailed* (*en*), *hedgehog* (*hh*), *patched* (*ptc*), and *optomotor-blind* (*omb*), in abdominal histoblasts during the first 42 h after pupariation, a period in which the adult pattern is established. In addition, we describe the expression of the homeotic genes *Ultrabithorax*, *abdominal-A*, and *Abdominal-B*, which specify the fates of adult abdominal segments. Our results indicate that abdominal segments develop in isolation from one another during early pupal stages, and that some patterning events are independent of *hh*, *wingless*, and *decapentaplegic* signaling. We show that pattern and polarity in a large anterior portion of the segment are specified without input from Hh, and present evidence that abdominal tergites possess an underlying symmetric pattern upon which patterning by Hh is superimposed. The signals responsible for this underlying symmetry remain to be identified.



## Keywords

*hedgehog*; *engrailed*; *optomotor-blind*; segment polarity; homeotic genes; bithorax complex; abdominal histoblasts[Recommended articles](#)   [Citing articles \(32\)](#)



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