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Title:	Novel role of the homeotic gene deformed (dfd) in progenitor fate determination during haematopoiesis in <i>Drosophila melanogaster</i>
Authors:	Nayak, Adyasha (/jspui/browse?type=author&value=Nayak%2C+Adyasha)
Keywords:	Haematopoiesis Embryonic Blood Anlage Immunohistochemistry Whole mount of embryos
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Abstract:	Exploration of haematopoiesis in <i>Drosophila</i> has been a contributing factor towards providing insights into signalling pathways and cell biological processes. The development and functionality of the larval haematopoietic organ-the lymph gland-has dominated much of the studies. Studies during early developmental stages have provided a layout of the events governing lineage choice determination of blood precursors. However, not much has been described beyond the spatial information and sequence of transcription factors involved. These early blood precursors develop from a specified cluster of cells-the blood anlage-under the regulation of some key factors. The procephalic primordium, from which the blood anlage forms, is regulated by the balanced interaction between homeotic and patterning genes. The focus of this project has been to understand the direct regulation of homeotic and patterning genes on the blood anlage, and ultimately on the fate choice determination of precursor cells. Here, we report the novel role of the homeotic gene deformed in blood precursor specification. The dfd expressing cells contribute to the population of mature blood cells; dfd is also a direct influencer of the fate specification of these cells, consequentially affecting the mature blood population in the embryo. The specific regulation by homeotic genes can provide a better understanding of the lineage diversification of progenitor cells. Further analysis could also provide a glimpse into signalling cascades involved in the development of certain cancers.
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