

Open Ph.D. projects

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Title of the research topic: Blood cell differentiation and tumor formation in *Drosophila* model organism

Description of the research topic: The fruit fly (*Drosophila melanogaster*) serves as an excellent model organism for studying various developmental processes, since its tissue- and organ formation, as well as the underlying regulatory mechanisms show striking similarities to those of vertebrates. In our laboratory, we study the blood cell development in the larva of the fruit fly.

Blood cells of the fruit fly, similarly to their vertebrate counterparts, develop from stem cells. However, when their differentiation is disturbed, tumors may be formed. Our previous experiments revealed that following wounding or the appearance of an invader, as well as in tumorous conditions, certain blood cells types are able to develop into other, effector blood cells. Our goal is to understand the steps of differentiation, to characterize the cells capable of the transition and the intermediate cell types, as well as to isolate the factors that regulate this transition.