

Ph.D. projects in progress

Mentor: Viktor Honti

Doctoral school: University of Szeged, Faculty of Science and Informatics, Doctoral School of Biology

Ph.D. student: Bayan Kharrat

Title of the research topic: The role of Headcase in the regulation of blood cell differentiation

Description of the research topic: Blood cell differentiation is a complex process, which is regulated by several signal transduction pathways. The *Drosophila* Headcase (Hdc) is located in the cytoplasm and was identified as an inhibitor of differentiation in different tissues. In the larva, Hdc exerts its effect in the posterior signaling center (PSC) of the lymph gland by blocking the differentiation of lamellocytes in the organ. The human homolog of Hdc (HECA) was shown to act as a tumor suppressor, therefore revealing the function of Hdc will also lead to a better understanding of carcinogenesis and cell differentiation in humans.

In our experiments, we would like to identify the interaction partners of Hdc with mass spectrometry (LC-MS/MS, Orbitrap Fusion), which will allow us to identify Hdc containing protein complexes, and to reveal the mechanisms via which Hdc contributes to prohemocyte maintenance in the PSC.