Ph.D. projects in progress

Mentor: Zsuzsanna Darula

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

Ph.D. student: Ádám Pap

Title of the research topic: Characterization of protein O-glycosylation

Description of the research topic: Glycosylation is among the most frequent post-translation modifications. It is well established that glycosylation profile of proteins is altered upon disease including cancer and autoimmune diseases. Detection of the altered glycosylation profile of proteins from readily available body fluids would be highly beneficial for diagnosis of diseases or treatment follow-up. The current project aims at the characterization of extracellular O-glycosylation using mass spectrometry. Earlier we have developed a two-step lectin affinity enrichment sample preparation worflow that enabled the characterization of O-glycosylation of human serum proteins. Further experiments are required for optimization and adaptation of the workflow for urine samples. Following determination of the biological variance of O-glycosylation in the urine of healthy individuals, we will compare O-glycosylation of urine samples from healthy and diseased (bladder cancer) individuals in a qualitative and semiquantitative manner.