

Offer of topics for Ph.D. study projects in Third Faculty of Medicine, Charles University in Prague

Project:	The role of atypical hexokinases in health and disease
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Project Narrative: <i>(max. 500 characters including spaces):</i>	The project aims to elucidate the role of atypical hexokinases, i.e., the molecules that phosphorylate glucose to glucose-6-phosphate in the first reaction of the glycolytic cycle. Those of the hexokinases that are better known, such as the glucokinase or hexokinase 2, are considered key regulatory glycolytic enzymes, the mutations of which lead to the monogenic diabetes (glucokinase) or cancer (hexokinase 2) onset. This enzymologic Ph.D. project is expected to allow the enzymologic characterization of poorly understood human atypical hexokinases, the elucidation of their roles in the human organism, for example on the elucidation of mechanisms employed in effects of cancer-associated somatic variations in these molecules, and will attempt to uncover the possibilities for experimental therapy of effects of these variations by pharmacotherapeutics and gene therapy.
Requirements for student applicants: <i>(specify your requirements such as degrees or period after degree was granted)</i>	The topic can be adjust largely to the focus of your prior education (general medicine, pharmacy, biochemistry, molecular biology and genetics). We expect enthusiasm and proactive approaches. Our laboratory is able to provide surplus scholarships above the standard sums granted by the university, and we offer the opportunity of a part-time work in the lab.