VRG10-001 - Molecular regulation of autophagy

Abstract

The research focuses on the regulation of selective and non-selective autophagy, and therefore analyzes the role and function of the Atg1 kinase complex. It is planned to comprehensively map the signaling pathways regulating Atg1 and identify its physiologically relevant targets. To date, no such substrates have been identified, and the regulation of Atg1 kinase activity as well as the nature of its components remain unclear. Budding yeast will be used as the main model system to address these questions because it offers the most powerful genetic, biochemical and cell biological experimental approaches. At a later stage of the project, the insights gained from budding yeast will be tested for evolutionary conservation using human tissue culture cells. Hence, there will be two main aims: Firstly, identification of Atg1 kinase substrates and secondly regulation of Atg1 kinase.

Keywords:
autophagy, starvation, Atg 1 kinase, Atg13, phosphorylation, Cvt pathway, substrates, budding yeast, Saccharomyces cerevisiae

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VRG leader:	Claudine Kraft
Institution:	Max F. Perutz Laboratories (MFPL) / University of Vienna
Proponent:	Graham Warren
Institution:	University of Vienna, Max F. Perutz Laboratories



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Further links to the persons involved and to the project can be found under
https://wwtf.at/funding/programmes/vrg/VRG10-001/