MAX PERUTZ LABS VIENNA

Leonard lab

Master's thesis

About the lab

The Leonard lab investigates the mechanisms by which signals are transduced in the cell into appropriate downstream effects. The post-translational modification of proteins with a single phosphate group, a process called phosphorylation, is a ubiquitous signaling mechanism that governs the flow of this information. We are interested in the mechanisms that govern the addition of phosphate groups by KINASES, their removal by PHOSPHATASES, and the structural and functional consequences of these modifications. We use a wide variety of biochemical, biophysical and structural biology tools, complemented with cell biology to explore how cells regulate the transmission of information at the molecular level. For more information on the Leonard lab please visit https://www.maxperutzlabs.ac.at/leonard.

About the Master thesis project

Chk2 is a protein kinase that is best known for its role in checkpoint-mediated cell cycle arrest in response to DNA damage. *Chk2* is a multi-organ tumor susceptibility gene and its mutation has been associated with the cancer predisposition disease, Li-Fraumeni Syndrome. The control of Chk2 activity is, therefore, critically important. The goal of the Master's project will be to elucidate the mechanism by which Chk2 kinase activity is regulated. The project will involve recombinant protein purification, mass spectrometry, quantitative biophysical and biochemical assays and, dependent on progress, possibly some structural biology.

Our motivation to study Chk2 comes from our work on the closely related protein kinase D (PKD), an essential kinase that regulates the process of secretion in cells. We have recently characterized the mechanism by which the kinase activity of PKD1 is regulated and, intriguingly, our findings raise fundamental questions about the regulation of Chk2.

Candidates should

- Hold a Bachelor's degree in biochemistry, chemistry or molecular biology
- Have practical experience in molecular biology

We are looking for someone

- who is excited by science
- who is fascinated by molecular mechanisms
- who is creative, critical, and communicative

Application

Apply now by sending your CV and motivation letter to Thomas Leonard (thomas.leonard@meduniwien.ac.at).

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A joint venture of
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Part of
Vienna BioCenter

About the Max Perutz Labs

The Max Perutz Labs are a research institute established by the University of Vienna and the Medical University of Vienna to provide an environment for excellent, internationally recognized research and education in the field of Molecular Biology. Dedicated to a mechanistic understanding of fundamental biomedical processes, scientists at the Max Perutz Labs aim to link breakthroughs in basic research to advances in human health. The Max Perutz Labs are located at the Vienna BioCenter, one of Europe's hotspots for Life Sciences, and host around 50 research groups, involving more than 450 scientists and staff from 40 nations.

www.maxperutzlabs.ac.at