

Offer for a Ph.D. position: Structure and function of the cancer driver MYC

Field	Biochemistry, Molecular and Cellular Biology, Proteomics
Place of Work	Institute of Biochemistry, University Innsbruck, Austria
Website	https://www.uibk.ac.at/biochemistry/people/hartl/

Project: Attenuation of MYC functions in breast and prostate cancer

The transcription factor MYC has multiple functions in cell proliferation, metabolism, and differentiation, and represents a major driver in human tumorigenesis. The MYC protein is mainly regulated by upstream signaling pathways (MAPK, PI3K) featured by the RAF or mTOR protein kinases, and represents a nuclear effector of these signaling pathways in advanced human breast and prostate cancer. Hence, MYC attenuation could suppress an invasive phenotype.

Protein expression and phosphorylation analyses are performed with cancer cell lines to map upstream and downstream acting protein kinases. Genetic *MYC* inactivation is done by generating a dimerization-defective transcription factor using the genomic editing tool CRISPR. Malignant and invasive phenotypes are monitored by cell migration assays. Target genes including protein kinase-encoding genes are identified by RNAseq. Clinically approved inhibitors directed against identified protein kinases are tested for pharmacological interference in organoids generated from cancer cells.

Requirements M.Sc. in Biochemistry, Molecular Biology, Organic Chemistry, Pharmacy, or comparable

Excellent knowledge in English, basic knowledge in German is of advantage

Knowledge and experience in biochemical, molecular biological, and cell biological techniques. Experience in the interpretation, documentation, and presentation of research results

High motivation, ability to work interdisciplinary, communication skills, capacity for teamwork, cooperativeness to become involved in the teaching of students

Position A Ph.D. position is offered in a multidisciplinary and internationally linked research environment. Starting date is October 1, 2021

Application Curriculum vitae, Master and Bachelor theses (abstracts), Certificates, Letter of motivation, Contacts for references.

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