

ETH Zurich is one of the world's leading universities for technology and the natural sciences. It has more than 18,500 students from over 110 different countries, including 4,000 doctoral students. ETH is ranked amongst the top-20 universities worldwide, and has been for the last consecutive decades.

We offer an inspiring, supportive and challenging environment that helps you to develop and sharpen a straight-forward research career.

Post-Doc or PhD student / Doktorand / Doktorandin

approx. CHF 90.000/y (post-doc) or CHF 50,000/y (PhD student)

We are studying the molecular and physiological basis of aging, and ways to modify these processes. Based on an unpublished data set, we together with collaborators have revealed more than 20 genes that are similarly regulated during physiological ageing in three distinct species, namely the nematode *C. elegans*, zebrafish (*D. rerio*) and mice (*M. musculus*). Subsequently, we have validated these genes by individually impairing their expression in *C. elegans*

to identify those that affect lifespan. By identifying the promoter regions of the uniformly regulated genes, we have moreover identified 12 transcription factors (3 known and 9 previously unknown), all of which have an impact on organismal ageing, as validated in *C. elegans*

. We now aim to characterize the previously identified ageing-related genes and related transcription factors which individually cause lifespan extension following knock-down, and subsequently, the individually related pathways to identify previously unknown molecular links to prevent the systemic ageing process. We will primarily use the model organism *C. elegans*

to study the individual effects of these genes on organismal lifespan by applying bioinformatics, gene knock-down and overexpression models, epistatic approaches and a wide spectrum of phenotyping-based and molecular tools. Subsequently and dependent on the primary outcome we will employ corresponding knock-out or overexpressing mouse models to support and extend the findings in nematodes. Ultimately we will be able to identify species-independent and hence overarching pathways that are capable of insinuating nutritional and pharmacological approaches in ageing humans.

You should bring enthusiasm and profound knowledge for biological science that drive your projects. Specific knowledge for the model organism *C. elegans* is not necessarily required, but helpful. Projects will build up on your strength and expertise you infuse into the projects.

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Application deadline: 31.05.2015