



Principal Investigator Grant

Project

Karsten Weis:

“The role of DEAD-box ATPases in RNA-mediated mechanisms of repeat expansion toxicity”

Granted amount CHF 300'000

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Duration 36 months



Main applicant

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The role of DEAD-box ATPases in RNA-mediated mechanisms of repeat expansion Toxicity

Many neurodegenerative diseases, including Huntington's disease and amyotrophic lateral sclerosis (ALS), result from an abnormally long repetition of a short sequence in the diseasecausing gene. This 'repeat expansion' results in the generation of both toxic protein and toxic RNA products. Over time, the RNA can aggregate into discrete foci, and it is unknown whether this process is harmful or protective for the cell.

The aim of this project is to investigate the role of repeat RNA aggregates in neurodegeneration, and to identify proteins that regulate their formation. We will focus on a class of proteins called the DEAD-box ATPases, which have been shown to control the flux of RNA into and out of aggregates.

Through this work, we hope to understand the molecular basis of RNA-mediated toxicity in neurodegenerative diseases and to discover novel targets for therapeutic interventions.