Hallacli lab

Master's Thesis

Introduction to the Lab

Neurodegenerative diseases like **Parkinson's Disease (PD)** pose a major challenge to our aging society. At the Hallacli Lab, we study how toxic protein aggregates, especially **alpha-synuclein (α-syn)**, contribute to disease progression.

Our recent work has uncovered a novel connection between α-syn and **Processing bodies (P-bodies)**—RNA granules that play key roles in RNA metabolism (Hallacli et.al, Cell, 2022). We aim to understand how these structures contribute to α-syn-induced toxicity and how **RNA granules interact with lipid membranes** in both healthy and diseased neurons.

About the position / the research project

Building on our previous discoveries, this project investigates how **α-syn overexpression disrupts RNA-binding protein (RBP) function**.
Your work will include:

- Using a **dual fluorescent reporter technology developed in our lab** to measure protein perturbation in a systematic and high-throughput manner.
- Performing **flow cytometry** as a readout
- Generating and screening **stable cell lines** for RBP-α-syn interactions
- Validating findings in **HEK293** and/or **iPSC-derived human neurons**

Candidates

We are looking for a **highly motivated** Master's student with:

- A Bachelor's degree in Molecular Biology, Biochemistry, Neuroscience, or related fields, with **strong** academic performance
- Strong experience in human cell culture and molecular biology techniques (e.g., cloning, RNA techniques, Western blotting, microscopy)
- Familiarity with or interest in **high-throughput screening** and flow cytometry
- **Excellent** organizational skills, attention to detail, and accurate lab documentation
- A **proactive mindset**, curiosity for neurodegenerative disease mechanisms, and ability to work independently and collaboratively
- Prior research experience and knowledge of **RNA biology, bioinformatics, or stem cell work** are a plus.

The position begins with a rotation, with continuation into the Master's thesis contingent on successful performance and mutual agreement.

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A joint venture of
universität wien
MEDIZINISCHE UNIVERSITÄT WIEN
Part of
Vienna BioCenter

Application Requirements

- CV
- Motivation Letter
- 1-2 Letters of Recommendation

Position start date: November 2025

Contact

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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 40 research groups, involving approximately 450 scientists and staff from more than 50 nations.

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