



## Principal Investigator Grant

### Project

Tetiana Serdiuk:

“Understanding the life cycle of  $\alpha$ -synuclein in synucleinopathies”

**Granted amount** CHF 200'000

**Starting date** 1.4.2024

**Duration** 24 months

### Main applicant

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### Understanding the life cycle of $\alpha$ -synuclein in synucleinopathies

Parkinson's disease remains an incurable global challenge. To the big part this is because of our poor understanding the mechanisms behind this disease and therefore very limited number of available drug targets. Alpha-synuclein aggregation and deposition into insoluble inclusions is a hallmark of Parkinson's disease. These aggregates are neurotoxic, and they are believed to cause initiation and progression of the disease. If we could clear alpha-synuclein aggregates from the brain, we would have chances to stop or even reverse the disease progression.

In this proposal we aim to reveal cellular proteins that can help to destroy and remove these aggregates. We will use a unique novel method, that allows us to study structural features of thousands of proteins in complex tissue and cell extracts and see the differences between health and disease. We will apply this method to patients' brain samples and model neurons to find the cellular proteins that help to fight and destroy alpha-synuclein aggregates.

With advanced genetic tools we will be able to select the most efficient 'degraders' of neuro-toxic alpha-synuclein species. We will propose these proteins as novel drug targets for boosting their efficiency in Parkinson's' disease using recently developed novel type of drugs (PROTACs).