

ER stress in PD

New ER stress mouse models for Parkinson's Disease

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Projektbeschreibung

Parkinson's disease (PD) is a neurodegenerative disease characterized by loss of dopaminergic neurons in the substantia nigra pars compacta (SNpc), which leads to impairments of motor and cognitive functions, and vegetative disturbances. Although most cases are considered sporadic and the etiology is still not known, α -synuclein aggregation plays an important role in PD pathogenesis, which may be associated to some pathological processes such as oxidative stress, endoplasmic reticulum (ER) stress, impaired protein degradation, and mitochondrial dysfunction. Many studies have suggested an implication of ER stress in PD pathogenesis; therefore, in the here proposed study, we aim to establish and characterize a new mouse ER stress model. For this purpose, two well-known ER stressors at different concentrations will be tested in vitro with iPSCs, and based on results, a first in vivo approach will be performed via intracerebroventricular (ICV) injection directly in the SN of wild type mice. Both ER stressors will be compared and the one that most resembles PD features will be used to completely characterize the model. Additionally, transgenic animals will be subjected to ER stress with the aim of obtaining a stronger phenotype and an improvement of the existing transgenic model, which will provide a higher translational value.

Projektpartner

- Scantox Neuro GmbH