# Momentia

Validation of mouse models for Lewy Body Dementias and Parkinson’s Disease in the frame of a drug development program

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| **Programm / Ausschreibung** | FORPA, Forschungspartnerschaften NATS/Ö-Fonds, FORPA NFTE2018 | **Status** | abgeschlossen |
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## Projektbeschreibung

Parkinson‘s Disease and Lewy Body Dementias show similar but not entirely identical pathologic hallmarks. Still, with regards to symptoms and disease progression they are very different. For the development of specific therapies and drugs fundamental knowledge about the particular underlying mechanisms of pathology is crucial. Transgenic animal models of neurodegenerative diseases have been designed to resemble certain aspects of the underlying pathologies, but do not feature the full range of pathology. In the past, scientific reports on preclinical studies of PD and/or LBD typically used only one single animal model, but of course typically claiming more general mechanisms. In terms of drug development it might be extremely attractive to point down the common but also the specific pathomechanisms, which are crucial for PD and LBD and at the same time druggable, with the aim to identify drugs that might be effective in PD or in LBD, or ideally in both.
In this project we are addressing molecular and cellular mechanisms of pathogenesis and pathophysiology of PD and LBD in three different animal models. The analysis will take place at different stages of disease progression (pre-symptomatic, early symptoms, late symptoms) of the PD and LBD models D-line, Line 61 (TNWT61) and A53T. Besides a profound description of pathomechanisms in these models, we are addressing novel concepts related to the underlying pathology, which might lead to the identification of novel drug targets. In a validation program, we will analyze in more detail the role of leukotriene signaling in PD and LBD animal models and provide further evidence that the leukotriene receptor antagonist Montelukast restores structural and functional integrity in the LBD animals. This will be addressed with behavioral tests of animals at symptomatic age to analyze cognitive and motor functions as well as emotional learning after six weeks of oral treatment with the leukotriene receptor antagonist. In further analysis special focus will be put on neuroinflammation, in particular on microglial phenotypes and activity states, which might be a central modulator of disease and disease progression.

## Projektpartner

- Scantox Neuro GmbH