

## **Vorschlag für ein Promotionsprojekt im Rahmen des VorSPrUNG-Programms**

Hauptbetreuer (VorSPrUNG-Konzept): Prof. Dr. Martin Weber

Project Title: „**Evaluation of the Neurotoxicity of Potential Drugs for the Treatment of Multiple Sclerosis**“

Multiple sclerosis (MS) is one of the most common immune-mediated neurological diseases of the central nervous system. Both peripheral and central pathomechanisms require targeted and effective therapy to prevent disease activity and progression. New promising therapeutic treatment concepts are continuously developed, with it being of fundamental importance that new groups of substances are carefully tested for potential neurotoxicity in order to be able to estimate undesirable side effects already during the preclinical stage.

The aim of this project is to evaluate the neurotoxicity of promising pharmacotherapies for the treatment of MS. Through comprehensive sequential testing, potential risks to the nervous system are to be detected.

An already established primary murine neuronal cell culture, which serves as an *in vitro* model for the investigation of the neurotoxic effects of drugs, is already available. Exposure of the neurons to the drugs to be tested, allows the assessment of their influence on cell morphology, survival and function. For this purpose, immunocytochemical analysis, viability and cytotoxicity analyses are intended to detect possible neurotoxic effects.

This doctoral project aims to gain a profound understanding of the potential neurotoxicity of promising MS drugs, which can contribute to improving the safety of treatment and avoiding possible side effects. It is therefore an important research project with direct impacts on improving the treatment of MS and the quality of life of patients.