## Module description

### Module title
- Cellular Neurobiology

### Abbreviation
- 03-TN-CN-152-m01

### Module coordinator
- holder of the Chair of Clinical Neurobiology

### Module offered by
- Faculty of Medicine

### ECTS
- 5

### Method of grading
- numerical grade

### Only after succ. compl. of module(s)
- --

### Duration
- 1 semester

### Module level
- graduate

### Other prerequisites
- --

### Contents

Structure, function, and molecular functional components of the peripheral nerves of the nervous system including its neuronal and non-neuronal cells as well as the neuromuscular endplate (model system mouse), motor behavioural tests in mouse models for motoneuron diseases; functional and morphological analysis of motoneurons and motor endplates, neural stem cells: characteristics, approaches for therapeutic strategies, anatomical, cellular/neuronal plasticity at selected brain structures, e. g. hippocampus and cerebellum (mouse model), immunohistochemistry/immunofluorescence in hippocampal/cerebellar slices, confocal microscopy, primary neuron preparations of dorsal root ganglia and hippocampal neurons, mouse perfusion, cLabs/Neuron to simulate various electrophysiological conditions, whole cell patch clamp recordings to determine ion channel properties.

### Intended learning outcomes

Students who successfully completed this module will have acquired insights into current experimental approaches in neurobiology. They will have been introduced to preparations and recording techniques to study the function and pathomechanisms of neural models systems. The students will have examined clinical aspects of neurobiology with a focus on the molecular, cellular and physiological mechanisms. Additionally, they will have learned how to document their own data that they collected during lab courses. In addition, the students will have learned to critically reflect their data in the context of the experimental methods used.

### Courses
- Type: V (0) + P (2)

### Method of assessment
- Type: Log (approx. 10 to 30 pages)

### Allocation of places
- --

### Additional information
- --

### Referred to in LPO I
- (examination regulations for teaching-degree programmes)

### Module appears in
- Master's degree (1 major) Translational Neuroscience (2015)
- Master's degree (1 major) Translational Neuroscience (2017)
- Master's degree (1 major) Translational Neuroscience (2018)
- Supplementary course Translational Neuroscience (2018)