



Early Stage Researchers/PhD positions

2 full time positions at the University Hospital Jena, Dept. of Physiology I

in a Marie Skłodowska-Curie EU Project; an innovative training program for early stage researchers,
for further information see <https://tobeatpain-itn.net/home/>

<https://euraxess.ec.europa.eu/jobs/347034/>

Topic 1 (ESR7)

Spinal hyperexcitability is a hallmark of many chronic pain states. Communication between glial cells, immune mediators and neurons plays an important role in generation and maintenance of spinal hyperexcitability. Whilst the significance of such interactions between different cell types is evident, the underlying mechanisms are poorly understood. Fundamental open questions are: 1) which cytokines are important for generation and maintenance of hyperexcitability; 2) do individual cytokines act independently or do they act as a functional network in which specific interactions take place; 3) are there critical time windows for the action of different cytokines.

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Topic 2 (ESR8)

Tight regulation of homeostasis in brain and spinal cord is required for normal neuronal function. Maintenance of homeostasis involves control of changes in extracellular fluid volume, ion concentrations and pH, perfusion and vascular permeability, turnover of transmitters/mediators and energy supply. These changes can be measured by using ion selective electrodes, an approach that has provided evidence for brain extracellular volume changes in AD models. This observation leads to the following questions: 1) are changes in the milieu in neurodegenerative disease restricted to the brain or do they also occur in brain stem or spinal cord; 2) does neuroinflammation – during the course of chronic systemic inflammation – cause significant alterations of brain and brain stem/spinal cord homeostasis; 3) are brain and brain stem/spinal cord homeostatic responses to noxious stimuli different in neurodegeneration compared to healthy brain; 4) are cytokines and neuropeptides major effectors.

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In both projects in vivo experiments will be conducted on rats, mice and mice models of neurodegenerative diseases.

Applicants will be considered on an equal basis, subject to the relevant permission to work in Germany as defined by the requirements set out by the Federal Republic of Germany.

Please note there are strict *eligibility requirements* which apply to all Marie Skłodowska-Curie Early Stage Researchers.

At the time of the appointment:

- 1) Applicants must not have resided or carried out his/her main activity (work, studies, etc.) in Germany for more than 12 months in the 3 years immediately before appointment under the project; and
- 2) Applicants shall also be in the first four years of their research careers at the time of appointment by the host organisation and have not been awarded a doctoral degree.

For more information on Marie Skłodowska-Curie Innovative-Training-Networks (ITNs), see <http://ec.europa.eu/mariecurieactions>.

- 3) Applicants are allowed to apply maximally for 3 positions of the TOBeATPAIN Innovative Training Network.

Qualifications:

Bachelor degree in any Biomedical Sciences (Biology, Medicine, Veterinary Medicine, Neuroscience or equivalent preferable)

An excellent or at least good master degree in any Biomedical Sciences (see above) is a prerequisite to apply for a PhD at the University of Jena.

Excellent command of the English language.

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