



International collaborative project - PhD student position available

The enzyme *mitogen- and stress-activated kinases 1 (MSK1)* is located in the nucleus of many cells and control gene expression. We discovered that when MSK1 and MSK2 becomes non-functioning, mice suffering from inflammation do not develop hypersensitivity to heat stimuli (i.e. “burning pain”), although they continue to develop hypersensitivity to mechanical stimuli. Further, we also discovered that when MSK1 becomes down-regulated only in nociceptive sensory neurons, mice exhibit significantly reduced pain responses in inflammation. These exciting results suggest that we have discovered the principal molecule within a functional molecular pathway in nociceptive sensory neurons that is responsible for the development and maintenance of hypersensitivity to heat stimuli but not to mechanical stimuli in tissue inflammation.

During this international collaborative work, we will integrate conventional and state-of-the-art methodologies, including functional assays, electrophysiology, gene editing, sequencing technologies and bioinformatics in an innovative manner to achieve our aim, to understand how MSK1 controls the development and maintenance of heat hypersensitivity in nociceptive sensory neurons in inflammation. Sequencing technology will allow us to identify MSK1-dependent genes in nociceptive sensory neurons. During a subsequent bioinformatics analysis, we will build a model of a molecular network in nociceptive sensory neurons that is responsible for the development of hypersensitivity to heat in tissue inflammation. Finally, the role of the most significant molecules in that network will be assessed.

The work will be conducted by an international team of well-known researchers in a collaborative effort between the University Debrecen (Hungary), the Medical University Innsbruck (Austria) and Imperial College London (UK).

To strengthen our team, we are seeking for a highly talented and motivated young researcher with exceptional communication, management and technical skills. The post is fully funded by an FWF international project grant and available at the Austrian partner from Feb 1st, 2020 for up to four years with a gross annual salary of 30.878 €. Active participation in the university’s PhD program (<https://phd-school.i-med.ac.at>) is a requirement.

If you are interested please contact michaela.kress@i-med.ac.at or i.nagy@imperial.ac.uk and send your application with c.v., copies of documents, two letters of reference and a motivation letter as one pdf file. We look forward to welcoming you in our team!