

EXPERIMENTAL RHEUMATOLOGY

Immunology and pain processes converging via TLR4 in rheumatic diseases

Clinical Relevance

Rheumatoid Arthritis (RA) and Osteoarthritis (OA) are diseases in which pain is a major issue and the major symptom driving patients towards the clinic. Patients may experience acute pain, which is often associated with either dysfunction or inflammation, continued acute pain and these can evolve into chronic pain. The latter is a very complex condition as the initial trigger of this pain might no longer play a large role in the continuation of pain. As the mechanism behind pain in patients is sometimes very obscure we aim at unraveling underlying processes.

Background

With respect to pain, there has been a shift in focus towards inflammatory factors, rooted in the discovery that pain is governed by more than nerves alone and that the CNS contains immune cells influencing pain states. Since inflammatory factors are of major importance in RA and have been recognized to play a role in OA pathogenesis, it is beyond doubt that inflammatory factors in RA and OA can effect pain as well. Our laboratory has investigated TLR4 as a key factor in RA and OA pathology. From a neuropathic pain perspective our collaborators have shown that TLR4 is involved in pain. Therefore we want to investigate if TLR4 might play a role in RA and OA pain as well and elucidate the mechanisms underlying its driving role in pain.

Goals

The goal of this project is to identify the role of TLR4 in pain in RA and OA.

We Offer

We are working in a state of the art laboratory that is internationally renowned for its research that combines therapeutic strategies with diagnostics in rheumatic diseases. In general projects within our lab include a broad spectrum of techniques; amongst others, work with patient material, histology, immunohistochemistry, cell culture, Western blot, FACS and qPCR. You will be able to improve your laboratory skills, develop your scientific thinking and expand your knowledge on molecular processes and immunology.

We are looking for

For this particular project we are looking for a highly motivated student with a keen specific interest for research on pain. Given the nature of the project we are looking for someone with a high degree of independence and with at least experience in cell culture based on prior internships. Content and specific topic as well as fundamental versus translational nature of the internship will vary based on the progress of the running overall project. Contact us for more information.

Contact

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