EXPERIMENTAL RHEUMATOLOGY

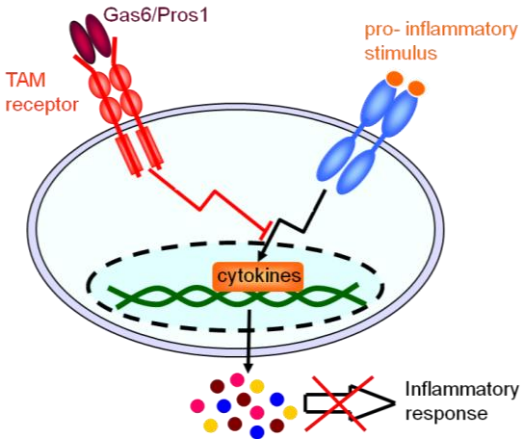
Title
AXL: The Biggest Little Hero

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 RA. You will participate in an interesting project that includes a broad spectrum of techniques including, amongst others, animal model(s) of arthritis, gene therapy, histology, immunohistochemistry, cell culture, 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.

For Who?
We are looking for a Master student for this project, who is able to work in a relative independent manner with infinite enthusiasm for science.

Clinical Relevance
Rheumatoid arthritis (RA) is a systemic autoimmune disease that affects 1% of the general population. This inflammatory disorder is characterized by cartilage and bone destruction of the articular joints. Patients experience pain, discomfort and impairment of mobility of the affected joints. RA is considered to be a multifactorial disease in which both genetic and environmental factors play a role. However, the mechanisms responsible for the progression of the disease remain ill-defined. Therefore, continued efforts in unraveling the progressors of RA are necessary to identify new therapeutic targets.

Background
In the pathogenesis of RA, the natural feedback mechanisms which normally control inflammation are either impaired or insufficient to halt the disease progression. Therefore, activating the existing natural negative feedback mechanism might be an interesting therapeutic approach. One such mechanism is exploited by the TAM receptors **T**yro3, **A**xl and **M**er. These receptors activate an inhibitory pathway of cytokine signaling and thereby control inflammation. (Rothlin 2015). In addition, they mediate the clearance of apoptotic cells (Lemke 2010). It has already been shown by our group that overexpression of the TAM receptor ligands in a mouse model of arthritis can reduce arthritis severity (van den Brand, 2013).



Goals
The goal of this research project is to analyze if overexpression of the TAM receptor AXL could be an interesting therapeutic target in RA. First, we will make lentiviruses overexpressing the AXL receptor or the control Luciferase. Next, we will confirm overexpression on mRNA, protein and functionality levels *in vitro*. Lastly, if we have confirmed that our construct is working, we will perform *in vivo* studies to examine whether overexpression of AXL is indeed protective in experimental arthritis.

Contact

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