

A185 **MICRO-RNA 155 CONTROLS THE PATHOGENESIS OF AUTOIMMUNE ARTHRITIS**

Stephan Blüml,¹ Michael Bonelli,¹ Birgit Niederreiter,¹ Antonia Puchner,¹ Georg Mayr,¹ Silvia Hayer,¹ Marije I Koenders,² Wim B van den Berg,² Josef Smolen,¹ Kurt Redlich¹ ¹Department of Internal Medicine III, Division of Rheumatology, Medical University of Vienna, Vienna, Austria; ²Department of Rheumatology, Radboud University Nijmegen Medical Center, Nijmegen, The Netherlands

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Objective Micro RNAs (miRNAs) are a new class of regulatory elements. Altered expression of miRNAs has been demonstrated in inflamed joints of patients suffering from rheumatoid arthritis (RA). However, the exact role of miRNAs in the pathogenesis of this disease has not been defined so far.

Methods Collagen induced arthritis (CIA) and K/BxN serum transfer arthritis was induced in wt and miR155^{-/-} mice. Severity of arthritis was determined clinically and histologically. Anticollagen antibodies and cytokines were measured by ELISA. The cellular composition of the draining lymph node after induction of CIA was measured by flow cytometry.

Results Here the authors show that miR155^{-/-} mice are completely protected from CIA. miR155 deficiency prevents the generation of pathogenic autoreactive B and T cells since anticollagen antibodies and the generation of antigen specific T cells are strongly reduced in miR155^{-/-} mice. Moreover, Th17 polarisation of miR155^{-/-} T cells is impaired as interleukin 17 (IL-17) and IL-22 levels are significantly reduced. Using the K/BxN serum transfer arthritis model, which only depends on innate effector mechanisms, the authors demonstrate that miR155^{-/-} mice, although developing similar severity of joint inflammation, show significantly

reduced local bone destruction due to reduced generation of osteoclasts.

Conclusion Taken together, this study demonstrates that miR155 is essentially involved in adaptive and innate immune reactions leading to autoimmune arthritis, and therefore might provide a novel target to treat RA.