“Understanding and interfering with autoimmunity: antigen specificities, lymphocyte repertoires and effector functions in rheumatoid arthritis”

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Abstract:

Autoimmunity to modified self, i.e. citrullinated proteins, are a hall mark of rheumatoid arthritis (RA) and are influenced by both genetic and environmental risk factors. This autoimmunity predates the inflammatory joint disease and hence allows the identification of individuals at risk of a future RA diagnosis. RA is hereby a disease which can be studied in various stages, including before diagnosis.

We have studied citrulline-specific B and T cells at different stages of disease and in various tissues. Based on epitope mapping, lymphocyte repertoires and effector functions, our data implicate profound T cell – B cell cross talk driving chronic immune responses. This suggests that disrupting such a forward loop should be beneficial. Indeed, severe cases of autoimmune diseases have been successfully treated with immune targeting therapy leading to so called immune reset (by CAR-T cell therapy or bi-specific T cell engagers). I will discuss a different approach focusing on targeting the precise autoimmunity which would have the benefit of maintaining protective immunity.