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Autoimmunity, Transplantation and Inflammation

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Our research focuses on the cellular and molecular context of aberrant DNA and RNA recognition in autoimmune diseases such as systemic lupus erythematosus (SLE). In particular, we are currently interested in key questions such as: How does the structure of secondary lymphoid organs influence the induction of tolerance to apoptotic cells versus the initiation of autoimmune reactions? What changes do DNA or RNA from apoptotic cells undergo during disease, and how do these modifications change DNA or RNA recognition by nucleic acid sensors and downstream signaling? To address these questions, we use a combination of cellular and molecular analyses, mouse models, and studies of patient samples. Answers to these questions will help to dissect complex autoimmune diseases into pathophysiological subtypes, with the ultimate goal to identify patient-specific pharmacological interventions.

Selected Publications

Translating nucleic acid-sensing pathways into therapies [2]
Junt T, Barchet W.
Nature Rev Immunol. 2015. Sep 15;15(9):529-44.

Form follows function: lymphoid tissue microarchitecture in antimicrobial immune defence. [3]
Junt T, Scandella E, Ludewig B.
Nature Rev Immunol. 2008.Oct;8(10):764-75.

Subcapsular sinus macrophages in lymph nodes clear lymph-borne viruses and present them to antiviral B cells. [4]
Junt T, Moseman EA, Iannacone M, Massberg S, Lang PA, Boes M, Fink K, Henrickson SE, Shayakhmetov DM, Di Paolo NC, van Rooijen N, Mempel TR, Whelan SP, von Andrian UH.
Nature. 2007. Nov 1;450(7166):110-4.

Click here [5] for additional publications.

Links
[1] https://www.novartis.com/our-science/postdoc-program/research-themes/immunology/tobias-junt-phd
[2] http://www.ncbi.nlm.nih.gov/pubmed/26292638
[3] http://www.ncbi.nlm.nih.gov/pubmed/18825130
[4] http://www.ncbi.nlm.nih.gov/pubmed/17934446
[5] http://www.ncbi.nlm.nih.gov/pubmed/?term=junt-t