

## **Microanatomy of Immune Responses in Health and Disease Conference**

Saturday 5<sup>th</sup> to Monday 7<sup>th</sup> of September 2009, Birmingham, United Kingdom

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From 5<sup>th</sup> to 7<sup>th</sup> of September I had the opportunity to participate in the conference on Microanatomy of Immune Responses in Health and Disease at the University of Birmingham, which was organized by Peter Lane, Graham Anderson and Jorge Caamano. It was a very interesting conference with approximately 150 participants. The meeting started on Saturday evening with a key note lecture by Jason Cyster about the role of S1P and lymphocyte egress from lymph nodes.

The next day was started with a session on Immune Responses In Vivo followed by a session on Lymphoid Tissue Inducer Cells in Health and Disease. During this session Tom Cupedo had an inspiring talk about the discovery of lymphoid tissue inducer cells (LTi cells) in human fetal mesenteric lymph nodes involved in lymph node development. After lunch, the day continued with an intensive session on Microenvironments of Lymphoid Tissues with some interesting speakers like Daniela Finke and Sanjiv Luther talking about the importance of IL7 as a survival factor for LTi cells and also dendritic cells during development, making use of some interesting transgenic mouse models. Nancy Ruddle talked about the regulation of the vasculature in lymph nodes and tertiary lymphoid organs. The final presentation of this session was from James DiSanto. This was a very interesting talk about the discovery of a new cell type in the lamina propria of the small intestine; a subpopulation of mucosal IL22-producing ROR $\gamma$ <sup>+</sup> cells showing properties of both natural killer cells and LTi cells. These innate immune cells may be crucial in maintaining mucosal homeostasis and the antimicrobial response.

In the afternoon, the first poster session was organized where I presented my poster entitled "Lymph node stromal cells regulate dendritic cell-induced gut-homing of T cells", demonstrating a crucial role for mucosal mesenteric LN (MLN) stromal cells in creating an instructive microenvironment for efficient differential imprinting of tissue tropism, since stromal cells from MLNs and not from skin-draining LNs support the induction of gut-homing receptors on T cells upon their activation, both in *in vivo* and *in vitro* experiments.

The day ended with a keynote lecture by Reina Mebius. She talked about the role of CXCL13 and retinoic acid, a vitamin A metabolite, in the very first formation of the lymph node anlagen during lymph node development. Of particular interest was the fact that retinoic acid was derived from neurons, showing for the first time that the development of lymph nodes is neuronally regulated.

On Monday, the meeting proceeded with two sessions focusing on lymphocyte recruitment to lymphoid tissues and on mucosa-associated lymphoid tissues. Topics covered by speakers like Sidonia Fagarasan and Gerard Eberl, were IgA synthesis in the gut and role of commensal microbes in shaping the intestinal immune system. William Agace had a very interesting presentation about different cell populations in the small intestine. He talked about the phenotypic and functional properties of CD103 expressing DCs and CXCR3 expressing myeloid cells in the lamina propria of the small intestine. The meeting ended with the final poster sessions where I had again the opportunity to present my data.

In conclusion, I was very happy to participate in this meeting, since I've enjoyed many interesting talks and had some very inspiring discussions during the poster sessions and social hours. I therefore would like to thank the Dutch Society for Immunology for granting me this financial support.