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Report NVVI travel grant

Keystone symposium on "B Cells at the Intersection of Innate and Adaptive Immunity"
29th May – 2nd June 2016 (Stockholm, Sweden)

B-cell meetings of the Keystone symposia series are organized biennially. Keystone Symposia on Molecular and Cellular Biology is a non-profit organization that aims to bring scientists within and across disciplines together to exchange ideas and information. The 2016 B-cell conference had a four-day program consisting of plenary sessions, workshops and poster presentations. I will highlight several key talks with relevance to my PhD project.

On the first day, Prof. Deborah Dunn-Walters (King's College London) presented differences in the B-cell receptor repertoire between old and young individuals. This might give more insights into why elderly are more vulnerable to infections. She showed that the CDR3 length of IgH transcripts were shorter after vaccination in young individuals but not in elderly. Prof. Andrea Cerutti (Mount Sinai School of Medicine, New York) presented new results on the role of IgD in mediating tolerance to allergens. He showed an induction of Th2 cytokines following binding of IgD to galectin-9 and CD44 on basophils. However, allergic reactions were diminished because IgD inhibits IgE-mediated degranulation of mast cells. Dr. Eric Meffre (Yale University School of Medicine, New Haven) presented new results on tolerance checkpoints. He showed that B cells after rituximab treatment have a replication history with low numbers of cell divisions. This excluded the idea raised by Jean-Claude Weill that some B cells in the gut might resist the treatment and that these serve as progenitors for the regenerating B cells. On the third day, Prof. Micheal Reth (Max Planck Institute of Immunobiology and Epigenetics, Freiburg) demonstrated that surface immunoglobulins on resting B cells were organized in separate clusters containing either IgD or IgM. Only after activation, IgD moves towards IgM. Our group has been working on T-cell dependent and independent IgA responses in the past. Therefore, I was interested in the presentation of Jeffrey Bunker (University of Chicago), who presented data on IgA responses in mice. He showed that antibodies reactive to commensal bacteria were generated in T-cell independent responses and that pathogens such as segmented filamentous bacteria induced T-cell dependent responses. Tam Quách from the group of Thomas Rothstein (Feinstein Institute for Medical Research, Manhasset) presented data about the progenitor cells of human B1 B cells, which they described as CD20+CD27+CD43+. This work is highly controversial, as several groups including ours have not been able to reproduce their findings. Interestingly, Marc Seifert presented contrary results about analysis of CD5+ B cells in humans from the peritoneal cavity, which have features of B1 B cells.

I presented our findings on B-cell memory in patients with selective IgA deficiency during the poster session on the first day. The specific scope of the meeting resulted in a lot of interactions and discussions during the poster session.

I was very excited to attend the conference and meet experts from the field. I would like to work as a post doc in the B-cell field after my PhD. The Keystone conference was a great opportunity for me to come in contact with leading scientists from around the world.

I am grateful to the Dutch Society for Immunology for providing me with a travel grant to attend the Keystone symposium on "B Cells at the Intersection of Innate and Adaptive Immunity".