Travel Report Keystone Symposium "Myeloid Cells"

April 10-14, 2016
Killarney, County Kerry, Ireland

The NVVI travel grant supported me to attend the Keystone Symposium on "Myeloid cells" in Killarney, Ireland. Monocytes, macrophages and neutrophils were the main topic of this meeting, as the title of this symposium describes. This was very related to my field of research since my PhD project is about the regulation of neutrophil activity through inhibitory receptors.

All days of the symposium were divided in two parts, oral presentations of keystone speakers in the morning and afternoon while poster presentations of participants were held in the evening. In particular, the poster presentations were very useful because you could obtain knowledge but also there was the opportunity to connect with PhD students, Post docs and PIs. In addition, breakfast and lunch were shared which has allowed me to talk with many people.

In total, 41 keystone speakers presented their work during the lectures. Particularly, the talk of Prof. Arturo Zychlinsky was interesting for me. His whole presentation was based on the release of neutrophil extracellular traps (NETs). He presented old data which prove that NET release is dependent on reactive oxygen species (ROS), myeloperoxidase (MPO) and neutrophil elastase (NE) but he also presented recent data which show that the underlying pathway of NET release is quite similar as of mitosis. For example, neutrophils of $CDK6^{-/-}$ mice (CDK6, a protein which is important in the regulation of mitosis) were unable to release NETs when stimulated with PMA or *C. albicans*. In addition, centrosome separation, NE activation, and phosphorylation of Rb, Lamin A/C, and Histone H3 occurs in NET release as well as in mitosis. Dr. Sergio Grinstein presented data on the role of integrins in clustering of receptors during phagocytosis. Second messengers generated by Fc receptor activation are able to activate integrins. These integrins then form a diffusion barrier that enables Src-family kinase activation as well as exclusion of CD45 from the phagocytic cup. Prof. Seamus J. Martin presented recent work on the role of neutrophil granule proteases as regulators of extended IL-1 family cytokine activation. All kind of endogenous pro-inflammatory molecules (also called DAMPs) are released from necrotic cells as well as IL-1 family cytokines. When present in the extracellular milieu, neutrophil granule proteases are able to process these IL-1 family cytokines which then represent the key initiators of necrosis-initiated sterile inflammation.

I presented my own work in form of a poster presentation. Many people were interested in the exact mechanism of inhibitory receptors. Besides the fact that people provided me with valuable feedback, it was very useful to interact with experts from the same field of research. For this, I would like to thank the Dutch Society for Immunology for financial support which has allowed me to attend this interesting Keystone Symposium on "Myeloid cells".

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