Seminar

Unraveling T cell - target cell communication through genome-wide screens for MHC class I

Robbert Spaapen

Sanquin, Amsterdam

When & where

Thursday 14 February 2019
15:30 – 16:30 hrs
(drinks afterwards)
Figdor Lecture Theatre,
Route 289

Host

Annemiek van Spriel,
Dept. of Tumor Immunology

Registration

Not required

Abstract

Receptor-ligand interactions are essential for immune cell function. Using state-of-the-art genome-wide knockout screens we identified that physical accessibility of surface MHC class I (MHC-I) for MHC-I interacting proteins can be restricted by a subtype of glycosphingolipids (GSLs), so-called (neo-)lactoseries GSLs. Moreover, tumor cells expressing these GSLs showed a reduced capacity to activate CD8+ T cells. Using a set of genome-edited cell lines we showed that a subset of cell surface proteins other than MHC-I are shielded by GSLs, thereby preventing the binding of their natural receptors. To conclude, the GSL repertoire regulates shielding of a subgroup of surface proteins which affects the interaction with CD8+ T cells. Tumors and viruses may thus specifically corrupt intercellular communication with the immune system through alterations in the cellular GSL signature.

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