

# Refining natural killer cell-based immunotherapy

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# PROPOSITIONS

belonging to the dissertation entitled

## **Refining natural killer cell-based immunotherapy: Strategies to unleash the killer in a suppressive tumor microenvironment**

Niken Miranti Mahaweni

Maastricht, 19 December 2018

1. A suppressive tumor microenvironment is a major setback for NK cell-based immunotherapy and needs to be taken into account in the *in vitro* setting. (this dissertation)
2. Combining a KIR-ligand mismatch donor and antibody-dependent cell-mediated cytotoxicity (ADCC)-inducing antibody is one of the powerful strategies to activate all subsets of NK cell. (this dissertation)
3. The licensing effect of the NKG2A receptor outweighs its inhibitory effect on highly activated NK cells. (this dissertation)
4. Functional studies on the new polymorphisms found on the FCGR3A gene would unravel their impact on NK-cell's ADCC and may help the selection of NK-cell donors, as well as, the design of clinical antibodies. (this dissertation)
5. Every type of immune-cell therapy has its own biological strengths and drawbacks, therefore, selecting NK cell-, T cell- or Dendritic cell-based therapy should be based on the immunologic profile of the cancer cell and the microenvironment.
6. NK cell-based therapy is highly promising in the clinic because it can be allogeneic and NK cells can be manipulated *in vitro* to target solid tumor, as well as, hematological malignancies in pediatric and adult patients.
7. The cost of cancer care is rising out of control. We have this amazing science, but it's becoming more out of reach. *-Mary C. Beckerle, PhD, director of the Huntsman Cancer Institute, University of Utah-*
8. To reduce unnecessary costs for cancer treatment, a personalized tumor mapping and *in vitro*-sensitivity testing would be necessary to predict the outcome of a cancer therapy.
9. Science is the acceptance of what works and the rejection of what does not. That needs more courage than we might think. *-Jacob Bronowski, Mathematician & Biologist-*
10. A happy world is made up of a happy heart. *-Niken M. Mahaweni-*