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Targeting MHC-I related proteins for cancer diagnosis and therapy

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Stellingen behorende bij het proefschrift

“Targeting MHC-I Related Proteins for Cancer Diagnosis and Therapy” – E. R. Verhaar

1. HLA-E's small pool of suitable peptides for presentation, its instability caused by its cytoplasmic tail, and its lack of allelic variation makes HLA-E a unique MHC-I protein. (This dissertation)
2. The HLA-E targeting antibody 19-H12 can be used for intracellular detection of HLA-E and may thus be used to study the intricate transport pathways of HLA-E and in the diagnosis of HLA-E-positive cancers. (This dissertation)
3. The absence of MICA/B from healthy cells, and overexpression of MICA/B on cancer cells, make MICA/B valuable targets for immunotherapy of cancer. (This dissertation)
4. The MICA-targeting nanobodies “VHH-A1” and “VHH-H3” deserve further exploration for use as nanobody-drug conjugates, as building blocks for chimeric antigen receptors on CAR NK cells and CAR T cells, and for other nanobody-based cancer diagnostics and therapeutics. (This dissertation)
5. A shortcoming in many tumor therapies is the lack of tumor specificity, causing the treatment to affect healthy cells as well. Finding and targeting tumor-specific antigens is important for the improvement of cancer therapy.
6. Further research may prove that CAR NK cell therapy is superior to CAR T cell therapy.
7. The engineering of nanobodies/VHHs from heavy-chain only antibodies lifted the field of immunology to a new level.
8. People wonder if we will ever find *the* “cure to cancer”. Although scientific developments may increase cancer survival probability, there won't be a “one-size-fits-all” treatment, as cancer is too heterogeneous and adaptive.
9. Scientists should be encouraged to spread scientific knowledge to the general public in layman's terms. This will reinforce the scientist's mastery of their topic of research and increase the public's understanding of science and the world around them.
10. Scientific development is stunted by a lack of collaboration, withholding of information, the fees associated with publishing and accessing published material, and a decrease in funding.
11. Interdisciplinary communication and collaboration may lead to new insights within one's own field of study.
12. An apple a day keeps the doctor away, so... I won't eat apples until I've received my doctorate.