Liposome-based vaccines for immune modulation: from antigen selection to nanoparticle design

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Stellingen behorende bij het proefschrift

Liposome-based vaccines for immune modulation:

From antigen selection to nanoparticle design

1. The elucidation of antigen-specificity of the immune response in atherosclerosis is a pre-requisite for the development of tolerogenic vaccines. *(This thesis)*

2. ApoB100-derived antigens are attractive targets of tolerogenic vaccination against atherosclerosis. *(This thesis)*

3. The inclusion of adjuvants such as vitaminD3 is essential for the translation of tolerogenic anionic liposomes from pre-clinical animal models to human. *(This thesis)*

4. The capacity to manufacture rigid anionic liposomes in a fast and scalable manner is key for the clinical translation of tolerogenic formulations. *(This thesis)*

5. Phospholipid composition determines the biological effect of liposomes by influencing both the particle rigidity and the protein corona composition. *(This thesis)*

6. Intranasal subunit vaccine formulated with cationic liposomes can induce rapid development of lung-resident memory T cells. *(This thesis)*

7. Re-establishing immune tolerance can be a game-changing approach to treat and prevent cardiovascular disease and its sequelae. Khan et al., *Nat Rev Immunol* (2024)

8. Preventing the pathogenic conversion of Tregs into a Th1/Th17 phenotype in atherosclerosis is an attractive target of immunomodulatory therapies. Wolf et al., *Circulation* (2020)

9. There is still much to be gained from the study of the immune response elicited by well-characterized nanoparticles. Benne et al., *Front. Immunol.* (2022).

10. The key role of (auto)immunity in such a wide range of different diseases should make us consider that everything is potentially autoimmune until proven otherwise. Shoenfeld Y., *Clin Rev Allergy Immunol* (2013)

11. No human endeavor is more exciting and potentially rewarding than trying, with occasional success, to understand some part of the natural world. Lehninger, Principles of Biochemistry

12. There is a lot of good waiting for you on the other side of tired. Get yourself tired. Andre Agassi, Open, An Autobiography

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Leiden, 10th September 2024