Stellingen behorende bij het proefschrift

Development of novel nanomedicines based on antimicrobial peptides for the treatment of multidrug-resistant Gram-negative pneumonia

1. The therapeutic efficacy of antimicrobial agents can be improved using nanomedicine formulation. – *this thesis; chapters 2 & 8*

2. Cationic antimicrobial peptides with modes of action additional to the 'self-promoted uptake' mechanism can be effective in the treatment of colistin-resistant bacterial infections. – *this thesis; chapters 4 & 5*

3. In comparative *in vitro* studies of antimicrobials with significant differences in molecular weight, concentrations should be expressed in molarity instead of weight per volume. – *this thesis; chapters 4 & 5*

4. Translational studies in animal models of infection should be leading the evaluation of the optimal dosing of last-resort antimicrobials with potential toxicity in severely ill infected patients. – *this thesis; chapter 6*

5. Nanomedicine development should investigate different nanocarriers in parallel using multiple infection models and experimental set-ups to find their full therapeutic potential. – *this thesis; chapters 2, 7 & 8*

6. Overcoming the healthcare crisis of antimicrobial resistance will require innovative approaches, such as antimicrobial peptides or nanomedicines development. – *The Lancet Infectious Diseases, 2016; 16(2): 239-251*

7. "Public policy-driven efforts will be necessary to expand the size and diversity of the development portfolio of antimicrobials." – *Personal communication by Dr. Magnus Strandh, STipe Therapeutics, Denmark*

8. The non-publication of animal experiments is problematic; dissemination of results should become a professional standard for animal research. – *PLOS ONE, 2019; 26:14(11)*

9. Het Oudgriekse woord πνευμονία (pneumonía) is etymologisch verwant aan het Nederlandse woord niezen. – *Etymologisch Woordenboek van het Nederlands*

10. It's not that children are little scientists, but that scientists are big children. – *Philosophy of Science, 1996; 63(4): 485–514*

11. Kennis is macht, macht is vermogen, vermogen is energie, energie is massa, en massa vervormt ruimte en tijd; een promotietraject is daarom in wezen niet te onderscheiden van een beleerde supernova.

Hessel van der Weide

Barcelona, 2020