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The battle against antimicrobial resistant bacterial infections: next stage development of antimicrobial peptides

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Stellingen behorende bij het proefschrift:

THE BATTLE AGAINST ANTIMICROBIAL RESISTANT BACTERIAL INFECTIONS

Next stage development of antimicrobial peptides

1. SAAP-148-PEG₂₇ holds promise as dual acting therapy to combat persistent bacterial infections by its combined antimicrobial and pro-inflammatory activities. (*this thesis, chapter 2*)
2. The antimicrobial agents SAAP-148 and halicin act synergistically and with more potency toward planktonic bacteria, biofilms and cell associated bacteria compared to the individual agents. (*this thesis, chapter 3*)
3. Hyaluronic acid-based nanogels are suitable as delivery system to efficiently encapsulate antimicrobial peptides, while maintaining activity and reducing cytotoxicity. (*this thesis, chapters 4, 5 and 6*)
4. Lyophilization in presence of polyvinyl alcohol allows for the preparation of shelf-stable hyaluronic acid-based nanogels loaded with antimicrobial peptides. (*this thesis, chapters 5 and 6*)
5. Inclusion of biologically relevant conditions (and models) during preclinical activity screening of novel antimicrobial agents will be more predictive of their clinical efficacy. (*based on Mercer et al., Front. Cell. Infect. Microbiol., 2020, 10:326*)
6. Standardized screening assays for antimicrobial resistance development, anti-biofilm activity and ability to eradicate persister cells should be included in a second phase of antimicrobial lead optimization.
7. Antimicrobial peptides are promising candidates to be used as adjuvants in combination with current antibiotics in order to combat antimicrobial resistance. (*based on Lewies et al., Probiotics and Antimicro. Prot., 2019, 11(2):370-381*)
8. Functionalization of drug delivery systems with bacterial biofilm-recognizing or -sensing moieties is a promising strategy to target biofilms or respond to stimuli at the biofilm microenvironment. (*based on Xiu et al, VIEW, 2021, 2:20200065*)
9. If you don't like bacteria, you live in the wrong body.
10. Every choice you make determines the course of your research. (*based on Michael Pilarczyk, Master your mindset, 2016*)
11. Failure is not the opposite to success, it provides key lessons elemental to become successful.

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