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(57) Abstract :
ABSTRACT TITLE: An Engineered Antimicrobial Peptide (AMP) An engineered antimicrobial peptide (AMP) comprising 16mer AMP (SR17) is provided that is acetylated at the N-terminus and amidated at the C-terminus with potent antibacterial activity with MIC ranging between 4.6-37.5 µM (8.8-71 µg/ml) against E. coli, P. aeruginosa, A. baumannii, and S. aureus bacterial strains. The engineered SR17 harbors a mixed ? ß motif in the model structure with ~ 40% NCAAs, of which four are D-amino acids, and two are C?? disubstituted amino acids like Aib and Aic. It contains two D-prolines (~ 10%), two glycines (~ 10%), two arginines (~ 10%), two lysines (~ 10%), and one tryptophan (~ 5%) in its sequence. The SR17 peptide demonstrates significant thermal and protease stability, membrane permeability, membrane damage, DNA binding, moderate toxicity toward mammalian cells, and negligible haemolysis toward human erythrocytes, indicating that SR17 and its variants could be the lead AMPs with potent broad-spectrum antibacterial activity. Fig. 2

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