

Supplementary data

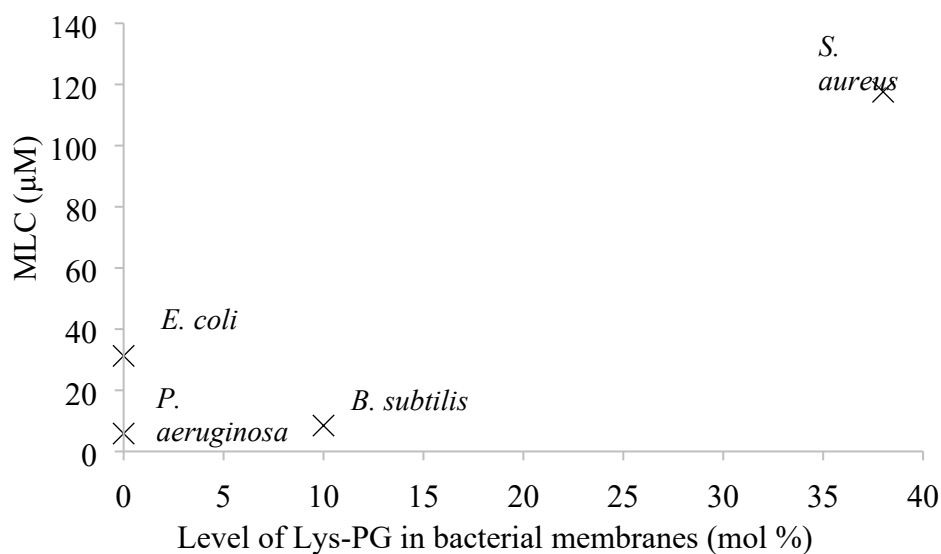


Fig. 1. Variation of M5-NH₂ antibacterial activity with membrane levels of Lys-PG. Fig. 1 shows the variation of MLCs for the antibacterial activity of M5-NH₂ with the corresponding Lys-PG content of the CM of these organisms. Represented are data for the activity of the peptide against *P. aeruginosa* and *S. aureus*, determined in the present study, along with that of the peptide against *E. coli* and *B. subtilis* for comparative purposes^{1,2}.

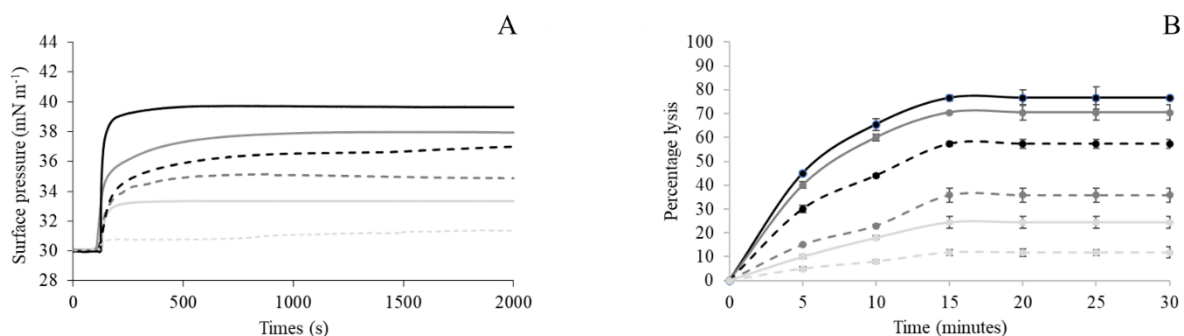


Fig. 2. Variation of M5-NH₂ membrane interactions with levels of Lys-PG. Fig. 2A shows the insertion of M5-NH₂ of into monolayer mimics of the *S. aureus* CM where the molar ratio of TOCL to POPG was held constant at 5:57 mol% and that of Lys-DOPG varied. Maximal values of these surface pressure changes were determined at LPG levels of 0 mol% (black), 10 mol% (grey), 20 mol% (black dotted), 30 mol% (grey dotted), 40 mol% (light grey) and 50 mol% (light grey dotted); plotted as a function of Lys-PG levels and presented in Fig. 9A of the main text. Fig. 2B shows the lysis of SUVs mimetic of the *S. aureus* CM by M5-NH₂ where the molar ratio of TOCL to POPG was held constant at 5:57 mol% and that of Lys-DOPG varied. Maximal values of this lysis were determined at LPG levels of 0 mol% (black), 10 mol% (grey), 20 mol% (black dotted), 30 mol% (grey dotted), 40 mol% (light grey) and 50 mol% (light grey dotted); plotted as a function of Lys-PG levels and presented in Fig. 9B of the main text.

References

1. S. Dennison and D. Phoenix, *Biochemistry*, 2011, **50**, 1514-1523.
2. S. R. Dennison, T. Hauß, K. Badiani, F. Harris and D. A. Phoenix, *Soft Matter*, 2019, **15**, 4215-4226.