Increasing the hydrophobicity of puwainaphycin/minnutisamides as a clue for generating lipopeptide variants with more potent antifungal activity.

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Cyanobacterial cyclic lipopeptides with a membrane permeabilizing effect often possess a unique structure containing polar hydrophobic free hydroxyl groups and long unpolar hydrophobic fatty acid chain. In our recent study, we found a relationship between the overall hydrophobicity of lipopeptide puwainaphycins and minutissamides and the cytotoxic and antifungal effect, respectively. Using chemical modification, we were able diminish cytotoxicity against HeLa cells while the antifungal activity significantly increases.