Synthetic antimicrobial peptides of the halictines family disturb the membrane integrity of *Candida* cells

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Synthetic antimicrobial peptides of the halictines family disturb the membrane integrity of *Candida* cells

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Abstract

We compared the potency of four derivatives of the antimicrobial peptide halictine-2 against six *Candida* species. Observed activity was peptide and species specific. Halictines rapidly permeabilized cell membranes and caused the leakage of cytosolic components. Their killing potential was enhanced by the commercial antimicrobial agent octenidine dihydrochloride. The effect on *C. glabrata* cells did not depend on the activity of Cdr pumps, but was influenced by their lipid composition. The pre-treatment of cells with myriocin, an inhibitor of sphingolipid synthesis, enhanced the peptides' activity, whereas pre-treatment with terbinafine and fluconazole, inhibitors of sterol synthesis, significantly weakened their efficacy. The killing efficacy of peptides increased in combination with amphotericin B. Thus