

Potent antibacterial activity of halogenated compounds against antibiotic-resistant bacteria

Abstract

Common Gram-positive clinical pathogens are showing an increasing trend for resistance to conventional antimicrobial agents. New drugs with potent antibacterial activities are urgently needed to remediate this problem. Halogenated compounds isolated from several species of the red algae genus *Laurencia* were examined for their antibacterial activity against 22 strains of human pathogenic bacteria, 7 strains of which were antibiotic-resistant bacteria. Four phenolic sesquiterpenes and a polybrominated indole showed wide spectra of antibacterial activity against Gram-positive bacteria including methicillin-resistant *Staphylococcus aureus* (MRSA), penicillin-resistant *Streptococcus pneumoniae*, and vancomycin-resistant *Enterococcus faecalis* and *E. faecium* (VRE). In addition, laurinterol and allolaurinterol displayed potent bactericidal activity against three strains of MRSA at 3.13 $\mu\text{g mL}^{-1}$, and three strains of vancomycin-susceptible *Enterococcus*, at 3.13 $\mu\text{g mL}^{-1}$ and 6.25 $\mu\text{g mL}^{-1}$, respectively.