Antibacterial activity of marine source extracts against multidrug resistant organisms

ABSTRACT

Antimicrobial resistance is the major problem of global dimensions with a significant impact on morbidity,mortality and healthcare-associated costs. The problem has recently been worsened by the steady increase in multiresistant strains and by the restriction of antibiotic discovery and development programs. Methicillin-resistant Staphylococcus aureus, pseudomonads and Escherichia coli are a major nosocomial and community-acquired pathogens for which few existing antibiotics are efficacious. The current study was conducted to investigate antibacterial activity of natural seaweed sources. Approach: Gracilaria changii Euchema denticulatum and sea cucumbers extracts against Methicillin-resistan-Staphylococcus aureus, Escherichia coli, Streptococcus pyogenes, Vibrio cholerae, Pseudomonas aeruginosa and Klebsiella pneumoniae. Results: The Minimal Inhibitory Concentration (MIC) values and Minimal Bactericidal Concentration(MBC) values of methanol extract were used against all assayed bacteria. Results indicated that G. changii, E. denticulatum and sea cucumbers extracts must possess major anti bacterial components against infectious microorganisms. Conclusion: The results obtained indicate that Gracilaria changii and Euchema denticulatum could be a source of natural products with antibiotic modifying activity to be used against multidrug resistant bacteria.

Keyword: Methicillin resistant staphylococcus aureus; Extended spectrum beta lactamase; Vancomycin resistant enterococci; Multiple minimal inhibitory concentration; Minimal bactericidal concentration; Community acquired pathogens