Antimicrobial activities of stembark and wood extracts from Nauclea subdita against pathogenic microorganisms

Abstract

Aims: The aim of the study was to investigate the antimicrobial activity of Nauclea subdita (Korth) Steud against six pathogenic microorganisms. Methodology and results: Young and matured trees of N. subdita were cut and separated into bark and wood parts, respectively, prior to extraction process. Phytochemical screening tests, antimicrobial activity, minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) values were determined. Preliminary screening for phytochemical components showed that both young and matured tree had similar constituents. Extracts from matured tree showed more potency in terms of the zones of inhibition sizes than the young tree. Extract of N. subdita was more potent to both marine bacteria, Vibrio parahaemoliticus and V. alginolyticus, while Candida albican and Aspergillus niger were resistant to it. The sensitivity test showed that 500 µg/mL is the optimum concentration for extract of bottom sapwood of mature tree to act as bactericidal. Conclusion, significance and impact study: The results from this study suggest that N. subdita bark and wood extracts may serve as potential source of antimicrobial agents for future development in medicine applications.

Keyword: Antimicrobial activity; Minimal bactericidal concentration; Minimal inhibitory concentration; Nauclea subdita