

Inhibition of growth of highly resistant bacterial and fungal pathogens by a natural product.

ABSTRACT

The continuous escalation of resistant bacteria against a wide range of antibiotics necessitates discovering novel unconventional sources of antibiotics. *B. oleracea* L (red cabbage) is health-promoting food with proven anticancer and anti-inflammatory activities. However, it has not been researched adequately for its antimicrobial activity on potential resistant pathogens. The methanol crude extract of *B. oleracea* L. was investigated for a possible antimicrobial activity. The screening method was conducted using disc diffusion assay against 22 pathogenic bacteria and fungi. It was followed by evaluation of the minimum inhibitory concentration (MIC). Moreover, the antibacterial and the antifungal activities were confirmed using the minimum bactericidal concentration (MBC) and the minimum fungicidal concentration (MFC), respectively. Remarkable, antibacterial activity was evident particularly against highly infectious microorganisms such as Methicillin-resistant *Staphylococcus aureus*, *Escherichia coli* O157:H7, *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, and *Salmonella enterica* serovar Typhimurium as well as against human fungal pathogens, *Trichophyton rubrum* and *Aspergillus terreus*. Red cabbage is a rich source of phenolic compounds, anthocyanins being the most abundant class, which might explain its potent antimicrobial action. This extract is potentially novel for future antimicrobials, inexpensive, and readily available at a large scale for pharmaceutical companies for further investigation and processing.

Keyword: Antibacterial; Antifungal; Red cabbage; Anthocyanins.