

Antioxidant and antibacterial activities of the leaf essential oil and its constituents furanodienone and curzerenone from *Lindera pulcherrima* (Nees.) Benth. ex hook. f.

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ABSTRACT

Background *Lindera pulcherrima* (Nees.) Benth. ex Hook. f. (Family: Lauraceae), an evergreen shrub, is an important medicinal plant distributed in temperate Himalayan regions. The leaves and bark are used as spice in cold, fever, and cough. Materials and

Methods In this study, the terpenoid composition, antioxidant, and antibacterial activities of the leaf essential oil and its major constituents are being analyzed.

Conclusion The in vitro antioxidant activity showed a potent free radical scavenging activity for the essential oil as evidenced by a low IC₅₀ value for DPPH radical followed by furanodienone (0.087 $\pm$ 0.03 and 1.164 $\pm$ 0.58 mg/ml respectively) and the inhibition of lipid peroxidation for the oil and furanodienone also followed the same order (IC₅₀ 0.74 $\pm$ 0.13 and 2.12 $\pm$ 0.49 mg/ml, respectively). The oil and the constituents were also tested against three Gram negative (*Escherichia coli*, *Salmonella enterica enterica*, and *Pasturella multocida*) and one Gram positive (*Staphylococcus aureus*) bacteria. The essential oil was effective against *S. aureus* (IZ = 19.0 $\pm$ 0.34; MIC 3.90 μ l/ml) while furanodienone showed potent activity against *E. coli* and *S. enterica enterica* (IZ = 18.0 $\pm$ 0.14 and 16.0 $\pm$ 0.10 respectively). On the other hand, curzerenone was found to be slightly effective against *E. coli* (IZ = 10.8 $\pm$ 0.52). The MIC value of the essential oil was least against *S. aureus* (MIC = 3.90 μ l/ml) and that of furanodienone against *E. coli* (MIC = 3.90 μ l/ml).

KEYWORDS

Antibacterial . antioxidant . curzerenone . furanodienone . lauraceae . lindera

REFERENCES