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Deciphering the Bioactive Potential of Four Malaysian Litsea Species for Antioxidant, Antifungal, and Antibiofilm Activities

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[Allhin, Audrey Ashleeynus](#)^a; [Salleh, Wan Mohd Nuzul Hakimi Wan](#)^{a, b} ; [Salihu, Abubakar Siddiq](#)^{a, c}; [Arzmi, Mohd Hafiz](#)^{d, e, f}; [Ghani, Nurungjah Ab](#)^{g, h}

^a Department of Chemistry, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Perak, Tanjong Malim, 35900, Malaysia

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Abstract

This study evaluates the antioxidant, antifungal, and antibiofilm activities of methanolic leaf extracts from four *Litsea* species (*L. glauca*, *L. fulva*, *L. rubicunda*, and *L. tomentosa*), highlighting their potential as natural therapeutic agents. The antioxidant activity was assessed using the β -carotene/linoleic acid bleaching assay, DPPH radical scavenging assay, and total phenolic content (TPC) determination. Among the species, *L. glauca* exhibited the highest antioxidant activity, with an 85.2% inhibition of β -carotene bleaching, a DPPH IC_{50} value of 126.2 μ g/mL, and the highest TPC of 130.1 mg GA·g⁻¹, demonstrating a strong correlation between phenolic content and antioxidant efficacy. Antifungal activity was evaluated against *Candida albicans*, *Candida lusitanae*, and *Candida auris*, with *L. tomentosa* showing the strongest activity, achieving MIC and MFC values as low as 62.5 μ g/mL against *C. albicans*. Antibiofilm activity was also notable, particularly for *L. tomentosa* and *L. rubicunda*, which significantly inhibited biofilm formation in *C. lusitanae* (70.0% and 65.5%, respectively) and *C. auris* (67.2% and 65.8%, respectively). These findings underscore the potential of *Litsea* species as sources of bioactive compounds for medicinal and industrial applications, warranting further research to isolate active constituents, elucidate mechanisms of action, and validate efficacy *in vivo*. © 2025, University of Zagreb - Faculty of Agriculture. All rights reserved.

Author keywords

antibiofilm; antifungal; antioxidant; Lauraceae; Litsea

Indexed keywords

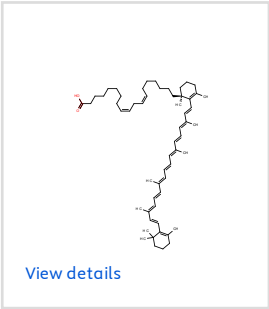
GEOBASE Subject Index


antioxidant; biofilm; bleaching; dicotyledon; free radical; inhibition

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Corresponding authors

Corresponding author	W.M.N.H.W. Salleh
Affiliation	Department of Chemistry, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, Perak, Tanjong Malim, 35900, Malaysia
Email address	wmnhakimi@fsmt.upsi.edu.my

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