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

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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 µg/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 µg/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.

Author keywords

antibiofilm; antifungal; antioxidant; Lauraceae; Litsea

Indexed keywords

GEOBASE Subject Index

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

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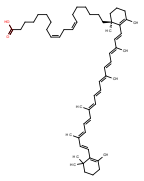

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