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Investigation of Antioxidant, Antifungal, and Antibiofilm Properties of *Lindera subumbelliflora* (Blume) Kosterm and *Lindera caesia* Reinw. ex Fern.-Vill. from Malaysia

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Abstract

The genus *Lindera* in the family Lauraceae, is widely distributed in tropical and subtropical areas throughout the world. Its roots and leaves have been used for thousands of years as a traditional Chinese medicine and functional food. This study was carried out to investigate the antioxidant, antifungal, and antibiofilm properties from *Lindera subumbelliflora* (Blume) Kosterm (leaves and roots) and *L. caesia* Reinw. ex Fern.-Vill. (leaves) growing in Malaysia. Antioxidant activity was determined using DPPH assay, antifungal activity by microdilution method for determination of MIC and MFC, whereas antibiofilm was determined using a semi-quantitative static biofilm. The *L. caesia* leaf extract revealed strong activity in DPPH assay with IC₅₀ value of 65.6 µg mL⁻¹, while the *L. subumbelliflora* roots extract exhibited the best antifungal activity against *Candida albicans* ECE1 with MIC and MFC value of 250 µg mL⁻¹. In addition, all *Lindera* extracts showed promising antibiofilm inhibitory activity against different *Candida* strains with biofilm inhibition values ranging from 50.2 to 78.0%. This study suggests that *Lindera* species might be an excellent source of antifungal, antibiofilm, and antioxidant drugs and would be helpful in minimizing the spreading of pathogenic microorganisms or preventing stress-related diseases. © 2024, University of Zagreb - Faculty of Agriculture. All rights reserved.

Author Keywords

antifungal; antioxidant; biofilm; *Candida albicans*; DPPH; Lauraceae; *Lindera*

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