

## Documents

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**Chemical composition of essential oil from *Lindera caesia* Reinw. ex Fern.-Vill. and its antifungal, antibiofilm, and molecular docking studies**

(2023) *Natural Product Research*, .

DOI: 10.1080/14786419.2023.2298720

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**Abstract**

The chemical composition, antifungal, antibiofilm, and molecular docking studies of the essential oil obtained from *Lindera caesia* were investigated. A total of thirty-nine components (96.7%) were identified using gas chromatography (GC-FID) and gas chromatography-mass spectrometry (GC-MS). The major components included terpinen-4-ol (26.3%), neo-intermedeol (23.2%), eudesma-4,11-dien-3-one (10.4%), and o-cymene (5.3%). The antifungal activity was tested against *Candida albicans* and *Streptococcus mutans* using the broth microdilution assay, whereas the microbial biofilms were determined using a semi-quantitative static biofilm. The essential oil exhibited activity against *C. albicans* (MIC 125 µg/mL) and *S. mutans* (MIC 250 µg/mL), and increased the biofilm of *C. albicans* by 31.25% when treated with 500 µg/mL. The molecular docking study shows neo-intermedeol, eudesma-4,11-dien-3-one, α-selinene, and β-selinene as the good candidate to target Erg11 with a binding energy of -7.3 kcal/mol. These findings demonstrated that the essential oil may have potential in dental application for caries prevention. © 2023 Informa UK Limited, trading as Taylor & Francis Group.

**Author Keywords**

*Candida albicans*; essential oil; *Lindera caesia*; neo-intermedeol; *Streptococcus mutans*; terpinen-4-ol

**Funding details**

Universiti Pendidikan Sultan Idris 2022-0130-102-01

The authors also would like to acknowledge international islamic university malaysia (grant: rmcg20-009-0009) and universiti pendidikan sultan idris (fundamental research university grant - gpuf : 2022-0130-102-01) for research funding.

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**Publisher:** Taylor and Francis Ltd.

**ISSN:** 14786419

**CODEN:** NPRAA

**Language of Original Document:** English

**Abbreviated Source Title:** Nat. Prod. Res.

2-s2.0-85180707152

**Document Type:** Article

**Publication Stage:** Article in Press

**Source:** Scopus

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