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Chemical composition of essential oil from *Lindera subumbelliflora* Kosterm and its effect on the susceptibility and biofilm activities of *Candida albicans* and *Streptococcus mutans*

(2023) *Natural Product Research*, .

DOI: 10.1080/14786419.2023.2278164

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Abstract

The chemical composition of the essential oil of *Lindera subumbelliflora* (Lauraceae) was investigated for the first time. The essential oil was obtained by hydrodistillation and fully characterised by gas chromatography (GC) and gas chromatography-mass spectrometry (GC-MS). The antifungal activity of *L. subumbelliflora* essential oil 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. A total of 28 components (99.6%) were successfully identified, which were characterised by β -eudesmol (14.6%), *cis*- α -bergamotene (11.0%), α -copaene (8.5%), dodecen-1-ol (8.5%), and (E)-nerolidol (8.3%). The essential oil exhibited activity against *Candida albicans* and *Streptococcus mutans* with MIC values of 250 and 500 μ g/mL, respectively. The essential oil increased the biofilm of *Candida albicans* by 38.25%, however, decreased the biofilm of *Streptococcus mutans* by 47.89% when treated with 500 μ g/mL. Thus, the essential oil has a promising application in dentistry via inhibition of the growth of *Candida albicans* and *Streptococcus mutans*. However, the antibiofilm activity of the essential oil is only applicable for cariogenic *Streptococcus mutans*. © 2023 Informa UK Limited, trading as Taylor & Francis Group.

Author Keywords

antibiofilm; antifungal; candida albicans; Essential oil; lindera subumbelliflora; β -eudesmol

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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-s2.0-85175983773

Document Type: Article

Publication Stage: Article in Press

Source: Scopus