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Indonesian Journal of Chemistry • Open Access • Volume 22, Issue 4, Pages 1014 - 1024 • 2022

Document type

Article • Gold Open Access

Source type

Journal

ISSN

14119420

DOI

10.22146/ijc.72583

Publisher

Gadjah Mada University

Original language

English

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GC-MS Based Metabolite Profiling and Antibacterial Activity of Torch Ginger (*Etlingera elatior*) Flowers Extract

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Abstract

Torch ginger (*Etilingera elatior*) flowers are well known for their antibacterial effects against *Staphylococcus aureus*, however, the active compounds are still unknown. The purpose of this study was to conduct GC-MS-based metabolite profiling of torch ginger flower and identify compounds correlated with its *S. aureus* antibacterial activity using Orthogonal Projection to Latent Structure (OPLS). Using the well diffusion method, the antibacterial activity of ethanol extract, hexane, chloroform, and ethyl acetate fractions with a concentration of 80 mg/mL were investigated. The ethyl acetate fraction inhibited *S. aureus* growth the most (diameter of inhibition zone, DIZ 13.00–13.20 mm), while the hexane (DIZ 9.55–10.05 mm) and chloroform (DIZ 10.00–11.00 mm) fractions had moderate inhibitory activity, but the ethanol extract had no antibacterial effect. Using OPLS analysis, the GC-MS metabolite profile of all extracts and fractions was linked with the profile of antibacterial activity. This analysis revealed that Dodecanoic acid, 5-Tetradecene, and n-Hexadecanoic acid were identified as the compounds that were significantly connected with antibacterial activity. © 2022, Gadjah Mada University. All rights reserved.

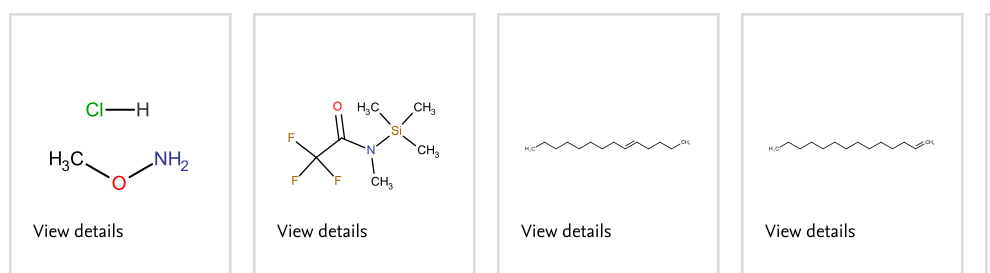
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Funding text

The authors are very thankful to the Lembaga Penelitian Universitas Sumatera Utara for funding this research (TALENTA USU No: 2590/UN5.1.R/PPM/2018).

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