

LCMS-Based Profiling and Identification of Phytochemicals in *Albertisia Papuana* Becc. Buffer Extracts

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Structured Abstract

Background: *Albertisia papuana* Becc. is a flowering plant from the family of Menispermaceae. This species is native to various regions, including Borneo, Cambodia, Jawa, Sulawesi, Sumatera, and Thailand as it thrives in the wet tropical biome. In Malaysian Borneo, the plant goes by the local names 'Pokok ajinomoto' or 'Tapa', and it is traditionally used by the local people in Borneo for culinary and traditional medicinal purposes including treating symptoms related to stroke, hypertension, cancer, and tumour. The plant has been reported to execute biological activities including antiplasmodium, cytotoxic, and suppressor for morphine-addiction withdrawal symptoms. However, the phytochemistry of the plant's leaves remain understudied. The objectives of this research were to profile and identify the phytochemical constituents present in *A. papuana* buffer extracts.

Methods: The phytochemical profiling was done using liquid chromatography-mass spectrometry (LCMS)-based technique. Whereas the phytochemicals were identified through advanced processing tools of tandem MS-databases driven analysis utilizing MZmine, GNPS, and SIRIUS platforms.

Results: These methods managed to identify a total of 56 phytochemicals from different classes of compounds including alkaloids, flavonoids, terpenoid, and several other groups. Among these, two compounds namely nicotiflorin **14** and isorhoifolin **16** are the first time identified in the family. While 23 compounds including 5'-deoxy-5'-(methylsulfinyl) adenosine **1**, coclaurine **3**, magnoflorine **6** isoschaftoside **7**, reticuline **8**, isovitexin **9**, sinapic acid **10**, dicoumaroyl spermidine **11**, apigenin **12**, loliolide **16**, moupinamide **18**, ferulic acid **19**, n-acetylanonaine **20**, 13S-hydroxy-9Z,11E,15Z-octadecatrienoic acid **21**, norsalsolinol **25**, hexapeptide-9 **38**, naringenin **40**, caffeoyl tyramine **46**, rotundine **47**, nornuciferine **48**, paprazine **49**, acaciin **51**, kamaline **53** are newly reported to the genus and the species.

Conclusion: In summary, employing tandem LCMS with the integration of advanced processing tools has demonstrated its effectiveness in revealing the structural characteristics of phytochemicals found in *A. papuana* Becc. It is recommended to isolate and identify some of the phytochemicals to affirm the technique's reliability.

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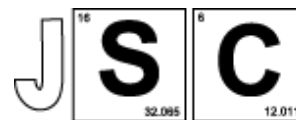
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