First GC-MS report on the root phytochemistry of *Neuracanthus sphaerostachyus* (Acanthaceae)

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Abstract

Neuracanthus sphaerostachyus (Nees) Dalzell (Acanthaceae) is an ethnomedicinal herb widely used in India, where root preparations are applied topically for skin ailments such as ringworm. Despite its traditional importance, the phytochemical composition of the roots has not been systematically investigated. In the present study, the ethanolic root extract of *N. sphaerostachyus* was analyzed by gas chromatography-mass spectrometry (GC-MS) to obtain a preliminary phytochemical profile. The total ion chromatogram revealed a limited number of detectable constituents, dominated by a major peak corresponding to a sterol/triterpenoid-type compound, along with minor amounts of long-chain hydrocarbons and fatty acid amides such as 9(Z)-octadecenamide. Compound identities were tentatively assigned based on comparison of mass spectra with the NIST library and published data, and all identifications are considered putative due to the absence of authentic reference standards and derivatization procedures. Several detected compound classes are known to exhibit antimicrobial, antifungal, and anti-inflammatory activities, which may partly explain the traditional use of the roots in treating dermatological disorders. This study represents the first GC-MS-based phytochemical report on the roots of *N. sphaerostachyus* and provides baseline chemical information to support future isolation and bioactivity-guided investigations.

Keywords: *Neuracanthus sphaerostachyus*, GC-MS, root phytochemistry, Acanthaceae, triterpenoids, fatty acid amides