

Identification of Naturally Occurring Carbazole Alkaloids Isolated from *Murraya koenigii* and *Glycosmis pentaphylla* by the Preparation of HPLC Fingerprint

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Abstract

The plants *Murraya koenigii* and *Glycosmis pentaphylla* are rich sources of different carbazole alkaloids. A number of monomeric carbazole alkaloids with C₁₃, C₁₈, and C₂₃ carbon frames and a good number of dimeric carbazole alkaloids were isolated from these two plants. Scientists are still working on these two plants in search of more and more novel compounds. Many of these alkaloids have potential biological activities. Scientists have determined the structures of these compounds by detailed analysis of spectral data like UV, IR, Mass, ¹H NMR, and ¹³C NMR (1D and 2D). These procedures require expertise in spectral data analysis and huge time, and also these instruments are very costly. In this paper, I report the preparation of the HPLC fingerprint of some known carbazole alkaloids. These HPLC data will be helpful in quick and unambiguous identification of the natural products.

Keywords: Carbazole alkaloids; *Murraya koenigii*; *Glycosmis pentaphylla*; HPLC fingerprint.

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1. Introduction

Desoky [1] has published his work on isolating several phytosterols from *Murraya exotica* using column chromatography accompanied by HPLC. Similarly, several flavonoids from fruits of *Murraya paniculata* were purified by Ferracin *et al.* [2] using reverse-phase - HPLC. The use of HPLC is limited to the separation and purification of organic molecules. However, the HPLC profile can also be used for the identification and authenticity check of the compounds. In 2021, Chang and the group reported screening of anti-lipase components of *Artemisia Argui* leaves based on spectrum-effect relationship and HPLC-MS/MS [3].

Murraya koenigii, commonly known as curry leaf tree, and *Glycosmis pentaphylla*, commonly known as 'toothbrush plant,' belongs to the family Rutaceae and are rich sources of carbazole alkaloids [4-6]. The monomeric and dimeric carbazole alkaloids isolated from these plants have important biological activities [7-9]. Many scientists working in this field have also prepared several derivatives of these naturally occurring

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