



Quantitative analysis of 4,7-dimethoxy-5-methyl-1,3-benzodioxole in *Antrodia camphorata* extracts by TLC-densitometric method

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The medicinal mushroom *Antrodia camphorata* has been used as a traditional herb in Southeast Asia for treatments of diarrhea, hypertension and liver cancer. 4,7-Dimethoxy-5-methyl-1,3-benzodioxole (DMB), a major bioactive component in *A. camphorata*, was found to have potential anticancer properties. This study aimed to develop and validate an analytical method for the quantitative estimation of DMB in *A. camphorata* extracts using TLC-densitometric technique. The developed method employed an HPTLC plate precoated with silica gel 60 F254 and used acetone/*n*-hexane (0.5:9.5) as a mobile phase. The linear regression for the calibration curve provided a good linear relationship ($R^2 = 0.9979$) in the tested range of 1-5 $\mu\text{g}/\text{spot}$, while the limit of detection and limit of quantitation were 283 and 858 ng/spot, respectively. Furthermore, the method gave a satisfactory accuracy with an average %recovery of 101.22 ± 4.69 , whereas the repeatability and intermediate precision of the method represented %RSD of less than 2.0. In addition, the method was robust as it provided %RSD of less than 2.0 when analyzed under several mobile phase compositions. As a result, the validated TLC-densitometric method could be applied to quantify DMB in herbal medicinal products as well as raw materials from *A. camphorata* for quality assurance purposes.

Keywords: *Antrodia camphorata*; 4,7-Dimethoxy-5-methyl-1,3-benzodioxole; TLC-densitometry