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OPEN ACCESS

Simultaneous Determination of Paclitaxel and 10-Deacetyl Baccatin in *Taxus Baccata* Bark by HPTLC

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ABSTRACT

Background and Aim: The aim of this study was to develop an HPTLC method for the simultaneous estimation of paclitaxel (PAC) and 10-deacetyl baccatin (DAB) in *Taxus baccata* bark.

Methods: Quantitative estimation of PAC and DAB in the methanolic extract of the bark of *T. baccata* and its dichloromethane fraction was aimed in the study. Pre-coated silica gel 60 F_{254} plates were used as stationary phase and chloroform: acetonitrile (7:3 *v/v*) as the mobile phase. Standards were dissolved in analytical grade methanol separately to prepare stock solutions (1mg/ml, each). Calibration plots ranging from 1µl to 7µl were prepared. Densitometric detection and quantification of PAC and DAB was carried out at 254 nm.

Result: The HPTLC analysis showed the presence of PAC and DAB as compact spots at R_f of 0.48 ± 0.01 and 0.22 ± 0.01 respectively. The calibration plots were found to be linear for PAC and DAB with a regression coefficient of 0.98. The results indicated sufficient peak linearity and purity. The method was found to be precise, robust, specific and accurate. The results are compiled in Table 1 and the HPTLC plates are shown in Figure 1.

Conclusion: An efficient HPTLC method for the simultaneous estimation of PAC and DAB in *T. baccata* bark was developed. The present HPTLC method can be used for their simultaneous quantification in plant extracts and fermented products.

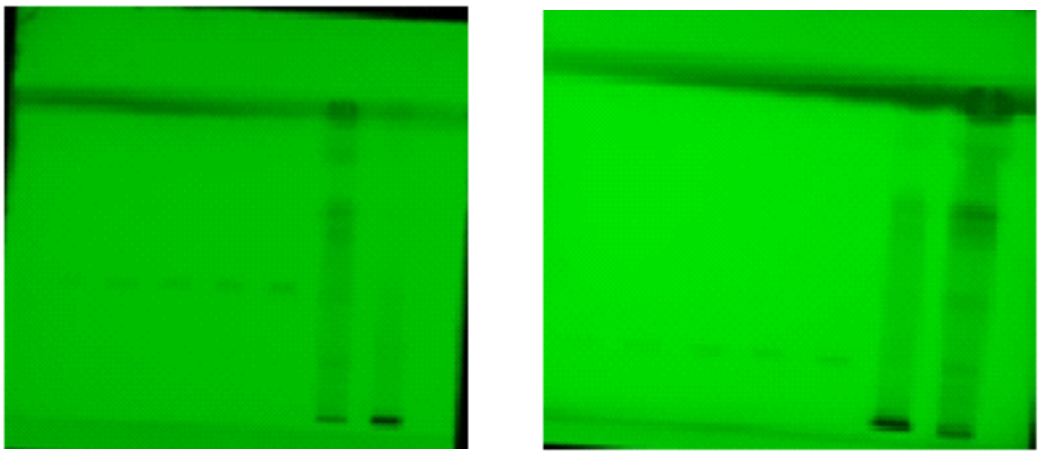

Fig. 1: HPTLC fingerprints of Taxus baccata leaves visualized at 254 nm [Mobile phase Chloroform-Acetonitrile (7:3)]

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Table 1: Content of DAB and taxol as estimated by HPTLC

DAB	Volume (µl)	Conc. (µg)	R_F	Taxol	Volume (µl)	Conc. (µg)	R_F
Extract	6	0.761	0.23	Extract	5	0.253	0.49
DCM fraction	6	1.169	0.23	DCM fraction	5	0.430	0.47

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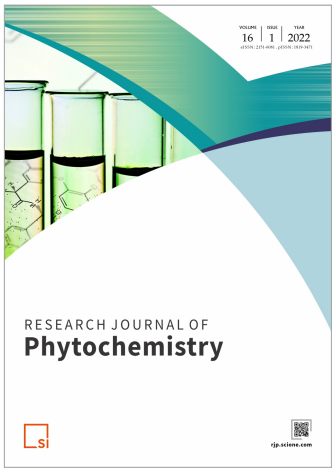

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