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Development and validation of a simple HPTLC method for the analysis of (-)-epicatechin simultaneously in *Averrhoa carmbola* L. and *Acacia nilotica subsp indica* L. bark extracts

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ABSTRACT

A sensitive and accurate high-performance thin-layer chromatographic method has been developed, validated and used for quantification of (-)-epicatechin in ethyl acetate fractionate of dried bark powder of Averrhoa carambola L. (AC) and Acacia nilotica subsp indica L. (AN). Chromatographic separation was carried out using silica gel plates with cyclohexane-ethyl acetate-formic acid, 4.0:6.0:1.0 (v/v/v) as a mobile phase. Detection and quantification were performed by densitometry, with a deuterium lamp, at 280 nm. The response to (-)-epicatechin reference standard was linear in the concentration range of 200-1600 ng per band. The method was validated for precision, repeatability and accuracy. Intra-day and inter-day relative standard deviation was ≤2%. Instrumental precision and repeatability of the method were found to be 1.02 and 1.59 respectively (% CV). The accuracy was checked by studying recovery at three levels; average recovery was 90.97% and 91.15% for AC and AN respectively. The method proposed for quantitative monitoring of (-)-epicatechin in AC and AN is rapid, simple and accurate and can be used for routine quality testing.

Keywords: *Averrhoa carambola* L., *Acacia nilotica subsp indica* L., (-)-epicatechin, HPTLC, validation.