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(57) Abstract :

The present invention discloses a validated High Performance Thin Layer Chromatography method for quantification of gallic acid in ethanol extract of Calotropis gigantea leaves. The method employs CAMAG HPTLC instrumentation including Linomat V sample applicator, twin trough development chamber, and TLC Scanner 3 with winCATS software. Sample extracts at 5 mg/ml concentration are applied as 5 mm bands on pre-coated silica gel 60 F254 plates. Chromatographic development is performed using an optimized mobile phase of Toluene, Ethyl Acetate, and Formic acid in ratio 4.5:5.5:0.5 with migration distance of 80 mm. Detection at 400 nm after derivatization with anisaldehyde sulfuric acid reagent provides optimal sensitivity. The gallic acid Rf value is 0.45 to 0.46. Calibration curve exhibits linearity from 100 to 1000 ng/spot with correlation coefficient exceeding 0.995. The gallic acid content in Calotropis gigantea leaf extract is determined to be approximately 0.390 percent. The method is suitable for standardization and quality control of Calotropis gigantea herbal products.

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