

**Thin layer chromatography methods in the characterization and stability analyses of the aqueous and dichloromethane extracts of *Lagerstroemia speciosa* L. (fam. Lythraceae) leaves**

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**L**agerstroemia speciosa L. (Fam. Lythraceae), or Banaba, is traditionally used for diarrhea, abdominal pain, and diabetes. Identification of Banaba in the Philippine pharmacopeia employs one-dimensional thin layer chromatography (TLC) and shows three separated components from the extracts of Banaba. In this study, the aqueous and dichloromethane (DCM) fractions of the methanolic extract of Banaba were subjected to two-dimensional TLC using acetone: chloroform and n-hexane: ethyl acetate: glacial acetic acid solvent systems. Visualization was done using iodine vapors, short- and long-wave UV light (254 nm and 365 nm), and vanillin-sulfuric-phosphoric acid spray reagent. Efficient separation was more clearly observed in the DCM fraction chromatogram. The aqueous fraction, thereby, was subjected to reverse phase thin layer chromatography (RPTLC) wherein a 1% acetic acid: acetonitrile (70:30) solvent system yielded the best resolution. Stability analyses using TLC in both aqueous and DCM fractions of the extracts of leaf samples pre-exposed to UV light for 12 and 24 hours and controlled temperature of 40°C and 60°C for three hours showed that only the increase in temperature caused a significant change in the number of spots separated and detected. Two-dimensional RPTLC analysis or one-dimensional RPTLC analysis employing gradient elution may be applied to the aqueous fraction to investigate if separation can further be optimized.

**Keywords:** Banaba, Two-dimensional thin layer chromatography, Reverse phase TLC, Stability analysis

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