

High-Performance Thin-Layer Chromatography (HPTLC) fingerprinting of *Warburgia ugandensis*: A high value medicinal plant

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Abstract

This study developed a High-Performance Thin-Layer Chromatography (HPTLC) fingerprint profile for *Warburgia ugandensis* Sprague, a medicinal plant widely used in East and Southern Africa to manage respiratory, gastrointestinal, and febrile conditions. Leaf and stem bark extracts were prepared using solvents of varying polarity (hexane, ethyl acetate, acetone, and methanol) and analysed by HPTLC. Separation was achieved using hexane: acetone (70:30) for leaf extracts and ethyl acetate: acetone: hexane (10:5:3) for stem bark extracts. Green to yellow bands were observed in leaf extracts under white light, while post-chromatographic derivatization with vanillin-sulfuric acid revealed intensely coloured bands in both leaf and stem bark fingerprints. The acetone leaf extract and derivatized acetone and methanol stem bark extracts produced the richest chromatographic profiles. Overall, intermediate-polarity extraction solvents combined with relatively non-polar mobile phase systems effectively resolved characteristic sesquiterpenoids of *W. ugandensis*. The developed HPTLC method is suitable for preliminary identification and quality assessment of *W. ugandensis* herbal materials.

Keywords: *Warburgia ugandensis*, HPTLC, fingerprint, medicinal plants, herbal medicine