

Abstract No: BS-08

Phytochemical screening and TLC profiles to identify adulteration of *Osbeckia octandra* (L.) (Heen bovitiya) with *Osbeckia aspera* and *Melastoma malabathricum*

S. R. K. S. Wijesinghe and A. I. S. Priyadarshan*

Department of Plant and Molecular Biology, Faculty of Science, University of Kelaniya, Sri Lanka
ashasri@kln.ac.lk*

Osbeckia octandra (L.) (Heen bovitiya), which belongs to the family Melastomataceae is an endemic plant to Sri Lanka. This taxon contains different phytochemicals that have great importance in traditional therapeutic systems and widely used to treat jaundice, hepatitis and liver disorders. Lack of accurate identification and need of continuous supply of raw materials for medicinal preparations can be a cause for adulteration of *O. octandra*. Therefore, the present study was carried out to investigate phytochemical screening and TLC profiles of *O. octandra* with available adulteration materials of *Osbeckia aspera* and *Melastoma malabathricum*. Hexane, ethyl acetate, and ethanol leaf extracts were prepared using air dried leaf samples of *O. octandra*, *O. aspera* and *M. malabathricum*. The extracts were subjected to phytochemical screening of saponins, phenols, flavonoids and anthocyanins. These leaf extracts were separated using thin layer chromatography (TLC) technique under four solvent systems with different ratios of Hexane (HE): Ethyl acetate (EA); 9:1:17:3; 4:1 and 13:7 and three solvent systems with different ratios of Hexane: Ethyl acetate: Ethanol (ET); 18:1:1; 15:3:2 and 6:3:1 respectively. The spots were observed and retention factors (R_f) were calculated under visible light and ultra violet light (365 nm). According to the results of phytochemical screening, saponin was observed in hexane leaf extracts where phenols, flavonoids and anthocyanin were observed in ethyl acetate and ethanol extracts for all three species. TLC profiles have shown a range of R_f values of various phytochemicals in different solvent systems due to the presence of diverse groups of phytochemicals. *M. malabathricum* was clearly separated from *O. octandra* and *O. aspera* in TLC profile of ethanol extracts developed in solvent system of HE: EA; 13:7 under visible light. This TLC profile was observed under ultraviolet light and it has also revealed a clear difference between the phytochemical compositions of *O. octandra*, *O. aspera* and *M. malabathricum*. The cluster analysis of R_f values obtained from TLC profile has shown a close relationship between the phytochemical compositions of *O. octandra* and *O. aspera*. In conclusion, TLC profile obtained from ethanol leaf extracts subjected to solvent system of Hexane: Ethyl acetate; 13:7 can be used to identify adulteration of *O. octandra* with *O. aspera* and *M. malabathricum*.

Keywords: Adulteration materials, *Osbeckia octandra*, Phytochemicals