

## Investigation of Wound Healing Ability and Chemical Constituents of “Wathupalu” (*Mikania cordata*) Leaf Extracts

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*Mikania cordata* (Burm. f.) Robinson is a herbaceous vine belonging to the family Asteraceae. Traditionally it is mainly used for cuts and wounds. This study aims to evaluate wound healing ability and chemical constituents in *M. cordata* leaves responsible for wound healing. Leaf extracts were prepared by either crushing or sonicating with different solvents. Scratch assay was performed to analyse cell migration *in vitro* using ethanolic extract of *M. cordata* leaves and C6 glioma cells. Cells were grown in culture dishes to create a wound as a scratch. Cells were incubated in ethanolic extracts having 10, 100, 500, and 1000 µg/ml concentrations, and cell movement was observed using a fluorescence microscope. Live cell images were recorded and analysed at different time intervals (0<sup>th</sup> hour, 6-, 12- and 24-hour) to quantify the cell migration with time. The 1000 µg/ml ethanolic extract of *M. cordata* leaves was found to have a positive effect on cell migration with a 100% wound closure rate over a 24-hour incubation period. Next, thin-layer chromatography (TLC) and column chromatography were carried out to separate the chemical constituents. TLC chromatograms showed that sonicated leaf extracts had fewer chlorophyll traces than crushed extracts. The high amount of plant pigment traces could conceal the bioactive chemical constituents. Hence, the study was continued with leaf extracts prepared by sonication. Leaf powder sonicated in DCM had more chemical compounds than the other extracts. Future studies have to be carried out on DCM extract and scratch assay to build the correlation between leaf extract and wound healing.

**Keywords:** *Mikania cordata* (Burm. F.) Robinson, external wound healing, scratch assay