

Antifungal, anti-inflammatory and cytotoxicity activities of three varieties of *Labisia pumila* Benth : from microwave obtained extracts.

ABSTRACT

Background: *Labisia pumila*, locally known as Kacip Fatimah, is a forest-floor plant that has tremendous potential in the herbal industry. It is one of the five herbal plants identified by the government as one of the national key economic areas to be developed for commercial purposes. There are three varieties of *L. pumila* namely, *L. pumila* var. *pumila*, *L. pumila* var. *alata* and *L. pumila* var. *lanceolata* and each has its own use. **Methods:** The leaves and roots of the three varieties of *L. pumila* Benth. were extracted using microwave assisted extraction (MAE). Antifungal activity of all plant extracts were characterized against *Fusarium* sp., *Candida* sp. and *Mucor* using the agar diffusion disc. Anti-inflammatory assays were performed using NO production by macrophage RAW 264.7 cell lines induced by LPS/IFN- γ and cytotoxic activity was determined using several cancer cell lines and one normal cell line. **Results:** The overall result demonstrated that leaf and root extracts of all three varieties of *L. pumila* exhibited moderate to appreciable antifungal activity against *Fusarium* sp., *Candida* sp. and *Mucor* compared to streptomycin used as positive control. Leaf and root extracts of all varieties significantly decreased NO release. However, the root extracts showed higher activity compared to the leaf extracts. Cytotoxic activity against MCF-7, MDA-MB-231 and Chang cell lines were observed with all extracts. **Conclusions:** These findings suggest the potential use of *L. pumila* Benth. as a natural medicine and indicated the possible application of this medicinal plant such anti inflammatory activity and cytotoxic agents.

Keyword: Antifungal agent; Antiinflammatory agent; Antineoplastic agent; Gamma interferon; *Labisia pumila* extract; Nitric oxide; Plant extract; Streptomycin; Tamoxifen; Unclassified drug.