

Antiarthritic and gastroprotective activities of *Ardisia crispa* root partially mediated via its antioxidant effect

ABSTRACT

Background *Ardisia crispa* Thunb A.DC (Myrsinaceae), commonly known as "hen's eyes", has been traditionally used in treating various inflammatory diseases. The present study evaluated anti-arthritic, gastroprotective and antioxidant activities of *Ardisia crispa* root hexane extract (ACRH) in various animal models. **Methods** Anti-arthritic activity was evaluated in complete Freund adjuvant (CFA)-induced adjuvant arthritis and gastroprotective effect was studied in the ethanol-induced ulcer model in rats. ACRH was further isolated to yield quinone-rich fraction (QRF) and both were analyzed for their total phenolic content, total flavonoid content and antioxidant activities in various antioxidant assays. Both ACRH and QRF were also analyzed for the quinone composition via gas chromatography analysis. **Results** ACRH exerted significant reduction of IL-1 β and TNF- α at a lower dose range in CFA-induced arthritis, as well as exhibited its cytoprotective effect against ethanol-induced ulcer lesion via involvement of mucosal nonprotein sulfhydryl (NP-SH) groups. ACRH also showed higher phenolic and flavonoid contents, as well as better antioxidant activities than QRF. **Conclusions** These findings demonstrated the plant as a potential anti-inflammatory agent, with ACRH succeeded in inhibiting both arthritic and ulcerogenic effect, possibly mediated via its antioxidant effect.

Keyword: *Ardisia crispa*; N-ethylmaleimide; Complete Freund adjuvant; Ethanol-induced ulcer; Free-radical; Quinone