Study of the Topical Anti-Inflammatory Activity of *Achillea ageratum* on Chronic and Acute Inflammation Models

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We have produced a chloroform extract from *Achillea* which includes stigmasterol and sitosterol. By comparing it with the pure compounds an anti-inflammatory effect (with mouse ears) is assumed.

The topical anti-inflammatory effect of the chloroform extract from *Achillea ageratum* (Asteraceae)and of stigmasterol and β-sitosterol, isolated of this extract has been evaluated, against to 12–0-tetradecanoylphorbol acetate (TPA)-induced mouse ear edema, using simple (acute model) and multiple applications (chronic model) of the phlogistic agent. Myeloperoxydase activity also was studied in the inflamed ears.

In the acute model the extract exerted a dose-dependent effect. All the doses assayed (1, 3 and 5 mg/ear) significantly reduced the edema (50%, 66% and 82%, respectively). The isolated sterols stigmasterol and β-sitosterol (with doses of 0.5 mg/ear) had similar effect as the extract with doses of 1 and 3 mg (59% and 65% respectively).

In the chronic model the anti-inflammatory effect generally was a more moderate one. The highest dose of the extract decreased the edema reduction to 26% with the highest dose of the extract applied. With the compounds the effect decreased to 36% with stigmasterol, and 40.6% with β-sitosterol.

Myeloperoxydase activity (MPO) was reduced by the extract and the compounds in the acute model, however, in the chronic edema, the enzyme inhibition was very weak with all treatments even with the standard substance.

These results indicate that the chloroform extract of *Achillea ageratum* and some of the its components stigmasterol and β-sitosterol are more effective as topical anti-inflammatory agents in acute than in the chronic process and their action is markedly influenced by the inhibition of neutrophil migration into inflamed tissue.