

Bioactive Flavones and Terpenes from *Baccharis calliprinos* and *B. rhetinodes* (Asteraceae)

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SUMMARY. The chemical study of *Baccharis calliprinos* Griseb. yielded 2 α ,3 α -dihydroxycaticic acid (I) together with the flavonoids luteolin-7,3'-dimethylether (II), homoeriodictyol (III) and eriodictyol-3',4'-dimethylether (IV). On the other hand, from the aerial parts of *B. rhetinodes* Meyen & Walp bacchotricuneatin A (V), oleanolic acid (VI) and the flavone (II) were isolated. The three isolated flavonoids were subjected to the antiinflammatory test using the carrageenan-induced mouse paw edema test.

RESUMEN. "Flavonas y Terpenos Bioactivos a partir de *Baccharis calliprinos* y *B. rhetinodes* (Asteraceae)". El estudio fitoquímico de *Baccharis calliprinos* Griseb. permitió el aislamiento del ácido 2 α ,3 α -dihidroxicatívico (I) y de los flavonoides luteolina-7,3'-dimetiléter (II); homoeriodictyol (III) y eriodictyol-3',4'-dimetiléter (IV). Por otra parte, de las partes aéreas de *B. rhetinodes* Meyen & Walp fueron aislados bacchotricuneatina A (V), ácido oleanólico (VI) y la flavona (II). Los tres flavonoides informados, fueron sometidos al bioensayo de actividad antiinflamatoria utilizando el método del edema inducido por carragenina en pata de ratón.

INTRODUCTION

Growing interest in the study of the pharmacological potential of plant natural products has led to the search of several kinds of compounds such as sesquiterpene lactones¹, diterpenes², and flavonoids³⁻⁴ as antiinflammatory agents.

It has been reported that flavonoids appear to be capable of selectively reacting with free radicals or systems related to the induction of inflammatory processes inhibiting leukotriene synthesis and histamine release, as well as acting as superoxide scavengers^{5,6}. In this way, the flavonoids have been considered as the active principles of many plants extracts with antiinflammatory properties.

In the past few years, nearly 100 species from the large American genus *Baccharis* (Asteraceae, Astereae) have been chemically investigated. The most widespread compounds reported are clerodane⁷ and labdane⁸ diterpenoids as well as triterpenoids of the oleanane series. In addition, kaurene terpenoids, cinnamic

acid esters, coumarin derivatives and flavonoids with different oxidation pattern are common secondary metabolites. Considerable attention has been devoted to the isolation of the clerodane-type furan-diterpenoids due to its antifeedant activity toward insect larvae^{9,10}. On the other hand, the aqueous extracts of some species such as *B. articulata* (Lam.) Pers., *B. crispa* Spreng. and *B. trimeria* (Less) DC., have been reported as antiinflammatory using the carrageenan mouse paw edema test¹¹. In the latter case, it has been proposed that rutin (quercetin 3-O- α -D-rhamnosyl-(1-6), β -D-glucoside) and a saponin mixture are the active principles³.

As a continuation of our investigations on the chemical constituents of species of this genus growing in the Cuyo region¹² (Argentina), we report herein the isolation and identification of the labdane and clerodane diterpenoids, together with one oleanane triterpene and several flavonoids from *Baccharis calliprinos* Griseb. and *B. rhetinodes* Meyen & Walp.

KEY WORDS: Antiinflammatory activity, *Baccharis calliprinos*, *B. rhetinodes*, Diterpenes, Flavonoids.

PALABRAS CLAVE: Actividad antiinflamatoria, *Baccharis calliprinos*, *B. rhetinodes*, Diterpenos, Flavonoides.

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