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Flavonoids from *Mutisia acuminata*

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Abstract

From the leaves and flowers of *Mutisia acuminata* Ruiz et Pav. var. *paucijuga* (Griseb.) Cabrera (Asteraceae), several compounds have been isolated, such as quercetin, quercetin-3-glucuronide, isorhamnetin-3-glucuronide and pelargonidin diglycoside. This is the first report of anthocyanins in the *Mutisia* genus.

Keywords: *Mutisia acuminata* var. *paucijuga*, Asteraceae, flavonoids, anthocyanins.

Introduction

Mutisia is a genus with 60 species which grow exclusively in South America distributed along the Andes, from Colombia to southern Argentina and Chile; southwest of Brazil, Paraguay, Uruguay; northeast of Argentina. Twenty-one species have been recorded for Argentina (Katinas, 1996). Previous work on flavonoids in other species of *Mutisia* follows: *Mutisia orbygniana* Webb. (Zdero et al., 1988); *Mutisia acuminata* Ruiz et Pav. (Daily et al., 1988; Catalano et al., 1995); *Mutisia acuminata* var. *hirsuta* (Daily et al., 1988).

Cabrera (1965) distinguished four varieties of *Mutisia acuminata*: *acuminata* *bicolor* Cabrera, *candolleana* (Gardner) Cabrera, *hirsuta* (Meyen) Cabrera and *paucijuga* (Gris.) Cabrera. In Argentina, *paucijuga* is the unique variety. *Mutisia acuminata* var. *paucijuga* is an 1.5 m high shrub, with pinnaticomposed leaves of 7–12 pairs of folioles, dimorphic flowers and red ligules. It is commonly known as “chinchircoma” and is used in the folk Argentinian medicine in two ways: a decoction of young leaves and branches as an antiseptic (external use) and the juice of fresh plant in the treatment of gastric ulcer (Vignale & Gurni, 1999).

Materials and methods

Mutisia acuminata var. *paucijuga* was collected in Salta, Rosario de Lerma Dept., at 2000 m height. A voucher specimen is deposited at the Herbarium Miguel Lillo (LIL 603606). Powdered leaves and flowers were extracted with ClCH_3 to eliminate the chlorophylls. Then, the filtrate was extracted successively with MeOH 80%, MeOH 50% and MeOH. The methanol extracts were evaporated under reduced pressure. The dried residue was redissolved in MeOH 80%. This last solution was used to prepare bidimensional paper chromatography, which were developed by the descending method on Whatman 3MM with TBA (3:1:1) and 15% AcOH as developing solvents, respectively. Structures were established on the basis of paper and TLC chromatographic behavior in different solvent systems, color reaction with NA (Naturstoffreagenz) and ammonia fumes under UV light, and spectrophotometric methods involving UV/VIS, according to standard procedures (Mabry et al., 1970; Harborne et al., 1975; Markham, 1982).

Results and discussion

The chromatographic pattern of flavonoids from *Mutisia acuminata* var. *paucijuga* showed the presence of quercetin, quercetin-3-glucuronide, isorhamnetin-3-glucuronide and pelargonidin diglycoside. Flavonoids were identified by co-chromatography with authentic samples, acid hydrolysis and spectral data, and are in accordance with those isolated in other species of *Mutisia*, with the exception of pelargonidin diglycoside, an anthocyanin. This is the first report of this type of compound in the *Mutisia* genus.

Accepted: September 10, 2002

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Acknowledgement

This research work was supported by a Grant of CIUNT (Consejo de Investigaciones Universidad Nacional de Tucumán).

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