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FLAVONOL DIGLYCOSIDES FROM *MELIA AZEDARACH*

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Melia azedarach L. is an ornamental tree, very common in the last century in Spanish gardens and promenades, although not so frequent today. It originated in China and the Himalaya country and was introduced to the Mediterranean region. It is the only *Melia* species to be found in Europe. Few reports on the genus *Melia* have appeared in the literature, and only two of them refer to flavonoid constituents. Subramanian *et al.* (1) isolated three known flavonol monoglycosides and a new one, myricetin-3′-*O*-L-arabinoside, from *M. azadirachta*. The same authors later reported (2) the isolation of quercetin-3-*O*-L-rhamnoside and quercetin-3-*O*-β-rutinoside (rutin) from *M. azedarach* and *Soymida febrifuga*. *M. azedarach* is the only plant from the Meliaceae family, which comprises about 50 genera and 800 species, investigated in relation to its flavonoid content (3). We now report the isolation in high yield of two flavonol diglycosides from the leaves of *M. azedarach*: quercetin-3-*O*-β-rutinoside (rutin) and kaempferol-3-*O*-β-rutinoside. This is, to our knowledge, the second report on the isolation of flavonoid diglycosides in the Meliaceae. Interestingly, we did not find detectable amounts of quercetin-3-*O*-L-rhamnoside (2), whereas the Indian workers did not report the isolation of kaempferol-3-*O*-β-rutinoside, a fact which may be related to the different habitat of both plant specimens.

EXPERIMENTAL

PLANT MATERIAL.—*M. azedarach* has been authenticated by Prof. J. Mansanet, of the Botany Department at the Faculty of Biology in Valencia. A voucher specimen is deposited in the herbarium of this Department. Leaves of the plant were collected in July at Buñol, Valencia, Spain, then air-dried and finely ground.

EXTRACTION AND ISOLATION.—The plant material (10 g) was extracted at room temperature with 80% aqueous MeOH (250 ml, 36 h) and 50% aqueous MeOH (250 ml, 36 h) (4). The extracts were mixed, concentrated with a rotary evaporator to remove most of the MeOH and extracted several times with $CHCl_3$ and EtOAc. The $CHCl_3$ extract did not contain detectable amounts of flavonoid aglycones. The EtOAc extract weighed 40 mg and showed two major spots on tlc plates. These were separated by column chromatography on Polyamide Macherey-Nagel SC6, 0.05-0.16 mm (elution with $CHCl_3$-MeOH-MeCOEt, 6:2:1). The two, tlc-pure, main fractions were percolated through a Sephadex LH-20 column (elution with MeOH). This gave kaempferol-3-*O*-β-rutinoside (14 mg, 0.14%) and rutin (8 mg, 0.08%), identified by spectroscopic (uv, ^1H and ^{13}C nmr, fabms) and direct (pc, tlc, mp) comparison with authentic samples. The aqueous extract that remained after the two extractions also contained some of these two compounds, but only trace amounts of other flavonoids.

Full details of the isolation and identification of the compounds can be obtained from the senior author.

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