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NORDITERPENE DILACTONES FROM *DECUSSOCARPUS ROSPIGLIOSII*[1]

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Decussocarpus rospigliosii (Pilger) De Laubenfels (Podocarpaceae) is a tree found in Venezuela throughout the rain forest zone of the Andes (1). Taxonomically, this species had been included previously in the genus *Podocarpus*, but it eventually has been reclassified in the genus *Decussocarpus* (2).

Recently, we reported the isolation and identification of four diterpenes in the phenolic fraction of the $CHCl_3$ extract from the bark of the same species (3). We now report the isolation of nagilactone E, nagilactone F, nagilactone G, β-sitosterol, and β-sitosterol 3-*O*-β-D-glucopyranoside from the neutral fraction of this extract. These compounds were identified by comparison of spectroscopic data with literature values (4–6). We also obtained and assigned the ^{13}C-nmr spectrum of nagilactone G; this spectrum has not been published previously.

Nagilactone E has only been isolated from *Podocarpus nagi* Zoll et Moritzi (5), while nagilactones F and G have been reported from several *Podocarpus* species (5–8).

Within the genus *Podocarpus* sensu stricto, norditerpene dilactones, which exhibit interesting biological and pharmacological activity (9–14), appear to be especially abundant (7). This fact suggests that the occurrence of similar compounds in *D. rospigliosii* could be important from the taxonomic and pharmacological point of view.

The isolation of some phenolic diterpenes from *Decussocarpus* species (3, 15–17), which also occur in *Podocarpus* species (16, 18–20), suggests that important phytochemical differences between these genera do not exist.

EXPERIMENTAL

PLANT MATERIAL.—Bark of *D. rospigliosii* was collected in La Carbonera, Dtto. Andrés Bello (Mérida, Venezuela). A voucher specimen has been deposited in the Herbarium of the Faculty of Pharmacy, ULA-Mérida (Amaro-Luis, J.M. 1516 MERF).

EXTRACTION, ISOLATION, AND IDENTIFICATION OF THE COMPOUNDS.—The extraction and partition of the $CHCl_3$ extract have been described previously (3). The neutral fraction was washed with H_2O, dried on Na_2SO_4, and concentrated. The black oil obtained (38 g) was preadsorbed onto Si gel and applied to a column of the same adsorbent (700 g) that was packed in hexanes and eluted with solvent mixtures of increasing polarity from hexanes to EtOAc. Fractions of 500 ml were taken and combined based upon tlc monitoring. Fractions eluted with C_6H_6-EtOAc (9:1), which showed three tlc spots, were subjected to preparative tlc on Si gel plates (two successive elutions with iPr_2O-hexane-EtOAc (4:2:1), affording nagilactone F (80 mg), nagilactone G (130 mg), and nagilactone E (180 mg). These compounds were identified by means of mp, ir, uv, ^1H nmr, and ^{13}C nmr (4–6), as well as by preparation of nagilactone E acetate. β-Sitosterol and β-sitosterol 3-*O*-β-D-glucopyranoside, isolated from fractions eluted with C_6H_6-EtOAc (4:1) and EtOAc (100%), respectively, were identified by comparisons with authentic samples.

^{13}C-NMR DATA OF NAGILACTONE G.—δ ($CDCl_3$) 29.9 (C-1)*, 17.6 (C-2), 28.7 (C-3)*, 42.0 (C-4), 44.2 (C-5), 72.6 (C-6), 54.0 (C-7), 58.3 (C-8), 159.2 (C-9), 36.2 (C-10), 117.2 (C-11), 163.3 (C-12), 83.2 (C-14), 26.9 (C-15), 16.6 (C-16), 21.3 (C-17), 25.3 (C-18), 180.0 (C-19), 24.2 (C-20). Asterisk indicates that assignment may be reversed.

Supplemental data for the three known norditerpene dilactones are available upon request from the senior author.

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