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8-*C*-PRENYLATED FLAVONES FROM THE ROOTS OF *TEPHROSIA HILDEBRANDTII*

W. LWANDE,* A. HASSANALI,

The International Centre of Insect Physiology and Ecology, P.O. Box 30772, Nairobi, Kenya

M.D. BENTLEY,

Department of Chemistry, University of Maine, Orono, Maine 04469

and F. DELLE MONACHE

Istituto di Chimica, Universita Cattolica, Via Pinetta Sacchettii-644 00168 Rome, Italy

Tephrosia hildebrandtii Vatke (Leguminosae) is a herbaceous plant occurring in East Africa (1). From the roots of *T. hildebrandtii*, we have previously described the isolation and identification of hildecarpin, a new 6a-hydroxypterocarpan with insect antifeedant and antifungal properties (2,3), and the isolation and identification of four new β-substituted flavans (4). Here we report the isolation of two 8-*C*-prenylated flavones during a further study of the roots of *T. hildebrandtii*. They have been identified as 5,7-dimethoxy-8-(3″-hydroxy-3″-methyl-*trans*-but-1-enyl) flavone and 5,7-dimethoxy-8-(3″-methyl-*trans*-but-1,3-dienyl)-flavone, named *trans*-tephrostachin and *trans*-anhydrotephrostachin, respectively (5).

Both *trans*-tephrostachin and *trans*-anhydrotephrostachin have been previously isolated from *Tephrosia bracteolata* Guill. et Perr. (5). Although *trans*-anhydrotephrostachin might reasonably be suspected as an artifact generated in the isolation procedure by dehydration of *trans*-tephrostachin, this does not, in fact, appear to be the case. *Trans*-anhydrotephrostachin appeared in the tlc of the original cold MeOH extract. Under the same conditions, no *trans*-anhydrotephrostachin was evident as a dehydration product occurring during the tlc of pure *trans*-tephrostachin.

EXPERIMENTAL

PLANT MATERIAL.—The roots of *T. hildebrandtii* were collected from Kilimambogo in Kenya; a voucher specimen is deposited at the Herbarium of the Botany Department, University of Nairobi, under the number 2418.

EXTRACTION, ISOLATION, AND IDENTIFICATION.—The air-dried roots (1.22 kg) were ground and extracted with MeOH in the cold, and the extract was evaporated in vacuo to give a gummy residue (69 g). The residue was partitioned between H_2O and $CHCl_3$. The $CHCl_3$ fraction (20.7 g) was then partitioned

further between hexane and a MeOH-H_2O (4:1) mixture. Evaporation of the MeOH from the MeOH/H_2O fraction and subsequent extraction of the residue with $CHCl_3$ yielded a gummy extract (12.6 g). Purification of this extract by column and preparative tlc on silica gel using an EtOAc/$CHCl_3$ gradient (2-100%) and toluene-EtOAc (4:1), respectively, as eluents afforded hildecarpin (320 mg), *trans*-tephrostachin (53 mg), and *trans*-anhydrotephrostachin (45 mg). The identification of the flavones was based on their physical and spectroscopic data (mp, ^1H and ^{13}C nmr, ms, ir, uv) and by comparison of the data with literature values.

TRANS-ANHYDROTEPHROSTACHIN.—^{13}C nmr δ ppm 18.27 (Me-3″), 55.95, 56.20 (5 and 7-OMe), 91.63 (C-6), 107.69, 108.64 (C-4a, C-8, C-3), 117.06, 117.79 (C-4″, C-1″), 126.16 (C-2′, C-6′), 129.00 (C-3′, C-5′), 131.23, 131.86 (C-4′, C-1′), 136.04, 142.98 (C-3″, C-2″), 159.19 (C-8a), 159.89, 160.84, 161.44 (C-5, C-2, C-7), 178.09 (C-4).

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C-GLYCOSIDES OF *RHYNCHOSIA CANA*

D. ADINARAYANA

Department of Chemistry, S.V. University Post Graduate Centre, Kurnool 518001, Andhra Pradesh, India

and P. RAMACHANDRAIAH

Department of Chemistry, S.V. Arts College, Tirupati 517 502, Andhra Pradesh, India

The *C*-glycosides of the leaves of *Rhynchosia cana* DC. (Leguminosae) are reported here.

EXPERIMENTAL

PLANT MATERIALS.—The leaves of *R. cana* were collected during the winter on 15 January 1985, from Kalyan Dam, Andhra Pradesh, India. The plant was identified by Dr. K.N. Rao, Reader in Botany, S.V.University, Tirupati, India. Vouchers of the plant (RC-IV) are deposited in the Herbarium of the Botany Department, S.V.University, Tirupati, India.

EXTRACTION AND ISOLATION OF PHENOLICS.— Dried leaves of *R. cana* (500 gm) were extracted with Me_2CO and MeOH. Separation of constituents was carried out by preparative tlc (cellulose, 15% aqueous HOAc) and pc (*n*-BuOH-HOAc-H_2O, 4:1:5, upper phase) (1, 2). The compounds obtained were orientin, isoorientin, vitexin, isovitexin, and vicenin-2. All the *C*-glycosides were identified by standard procedures and hydrolytic data as well as by comparison with authentic samples (mmp included) earlier obtained from *Rhynchosia* species (3, 4). The isolation of mono- and di- *C*-glycosides is common with other *Rhynchosia* species except in the case of *Rhynchosia cyanosperma*, in which *C*-glycosides were absent (5, 6).