Phytochemistry, 1979, Vol. 18, p. 1078. © Pergamon Press Ltd. Printed in England. 0031-9422/79/0601-1078 $02.00/0

FLAVONOIDS OF *LUPINUS ARBOREUS*

K. W. NICHOLLS and B. A. BOHM*

Botany Department, University of British Columbia, Vancouver, B.C., V6T 1W5, Canada

(*Received* 9 *November* 1978)

Key Word Index—*Lupinus arboreus*; Leguminosae; vitexin; orientin; cytisoside; 4′-*O*-methylorientin; apigenin; luteolin; quercetin.

Lupinus is a large, widely distributed and very conspicuous genus of the Leguminosae. Despite its prominence in the flora of western and northwestern North America and the myriad taxonomic problems in the genus [1], few chemical taxonomic studies have been described concerning the group. Harborne [2] reported the presence of *C*-glycoflavones in 15 species, apigenin and luteolin in 12 species, and kaempferol and quercetin in 13 species of lupines. The isoflavone genistein has been found by Hörhammer and Wagner [3] in *L. polyphyllus* and by the present authors [4] in *L. sericeus*. Apigenin-7-*O*-rhamnoglucoside and isorhamnetin have been reported from the genus [5] and the antifungal compound 5,7,2′,4′-tetrahydroxy-6-(3,3-dimethylallyl)-isoflavone has been reported from 12 species by Harborne and coworkers [6]. Volynets and coworkers [7, 8] have reported the presence of genistein and a series of flavone and flavonol glycosides in *L. luteus* leaves.

This note reports our study of the flavonoids of *L. arboreus* Sims., a common, yellow-flowered species found in coastal areas from southern British Columbia to California. Ten flavonoids were isolated and at least partially identified. Vitexin, orientin, cytisoside (4′-*O*-methylvitexin) and 4′-*O*-methylorientin dominated the profile. Minor constituents in the plant were apigenin, luteolin, their 7-*O*-glucosides, quercetin-3-*O*-glucoside and a quercetin-3-*O*-diglucoside which was not characterized further. Trace amounts of two compounds were seen which exhibited luteolin-like colour reactions. The 4′-*O*-methyl derivatives of vitexin and orientin appear not to have been reported previously from *Lupinus*.

EXPERIMENTAL

Lupinus arboreus Sims. was grown from seed collected from plants growing naturally on the campus of The University of British Columbia. A voucher is deposited in UBC.

900 g fresh plant material (excluding roots) were repeatedly extracted with MeOH and the extract combined and evapd to dryness. Extraction of the residue with hot H_2O, filtration through Celite Analytical Filter Aid and extraction of the filtrate with *n*-BuOH gave the polyphenol fraction. This material was subjected to column separation using Sephadex LH-20 and mixtures of MeOH and H_2O. Individual fractions from that column were partitioned on Avicel microcrystalline cellulose columns as described in ref. [9]. Purification of individual compounds was accomplished by TLC on small columns of SC-6 as described in the same paper. Identities of the compounds were established using UV and ^1H NMR methods [10], chromatography against standards when available, and hydrolysis with trifluoroacetic acid. The *C*-glycoflavones exhibited characteristic Wesley–Moser isomerizations during prolonged acid treatment.

* Author to whom correspondence should be addressed.

Acknowledgements—We thank the National Research Council of Canada for support in the form of operating and equipment grants. Mr. Nicholls was the recipient of a University Fellowship (UBC).

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