

FLAVONOIDS AND ALKALOIDS OF *CHAMAECYTISUS HIRSUTUS*  
AND *CHAMAECYTISUS SUPINUS*

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*Chamaecytisus* (Leguminosae) is represented in Turkey by eight species (1). This genus had previously been investigated especially for its alkaloids (2-6). In the present study, *C. hirsutus* (L.) Link and *C. supinus* (L.) Link were investigated for alkaloid and flavonoid content.

In a previous study it was stated that *C. hirsutus* did not contain alkaloids (2), and Harborne (7) has reported the presence of a glucoflavonoid and luteolin. In a study dealing with isoflavonoids, it was reported that the hydrolyzed extracts of both *C. hirsutus* and *C. supinus* contained daidzein, 5-methyl genistein, and genistein (8). In this present work, in addition to the above compounds, the flavonoids genistein 7-glucoside, orientin, isoorientin, apigenin 7-glucoside, luteolin 7-glucoside, and the alkaloids lupanine and cytosine have been isolated from *C. hirsutus* while genistein 7-glucoside, vitexin, isovitexin, orientin, and the alkaloid lupanine have been obtained from *C. supinus*. This is the first report of these compounds from these plants.

## EXPERIMENTAL

**PLANT MATERIAL.**—*C. hirsutus* was collected from Bolu-Kovankaya 1300 m on July 4, 1982 (ISTE 49224) and *C. supinus* from Bolu, Abant on July 4, 1982 (ISTE 51154). Samples were deposited at the ISTE, Herbarium of the Faculty of Pharmacy, University of Istanbul.

**EXTRACTION AND ISOLATION.**—The dried and powdered aerial parts of *C. hirsutus* (700 g) and *C. supinus* (300 g) were extracted and chromatographed by means of standard methods (2,9). As a result, eight flavonoid compounds, daidzein (9 mg), genistein (12 mg), 5-methylgenistein (6 mg), genistein-7-glucoside (17 mg), orientin (24 mg), isoorientin (8 mg), apigenin-7-glucoside (8 mg), luteolin-7-glucoside (11 mg), and two alkaloids, lupanine (89 mg) and cytosine (45 mg) were obtained from *C. hirsutus*. Six flavonoid compounds, genistein (7 mg), 5-methylgenistein (10 mg), genistein-7-glucoside (16 mg), vitexin (5 mg), isovitexin (7 mg), orientin (10 mg), and the alkaloid lupanine (32 mg) were isolated from *C. supinus*.

The substances were identified by means of chromatographic (pc, tlc) and spectral (uv, ir) analysis by comparing with authentic samples. The O-glucosides were subjected to acid hydrolysis while C-glucosides were hydrolyzed by means of FeCl<sub>3</sub> oxidation

Full details of the isolation and identification are available upon request from the authors.

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