FLAVONOIDS FROM *Centaurea omphalodes*

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The genus *Centaurea* (Asteraceae), comprising more than 500 species, is rich in flavonoids and sesquiterpene lactones [1–5], which are used to treat inflammations, cardiovascular problems, ulcers, and hepatic desorders [6–10].

Aerial parts of *Centaurea omphalodes* Coss. & Durieu were collected in April 2005 in the Ghardaia area (Septentrional Algerian Sahara) [11]. A voucher specimen was deposited at the Herbarium of the Faculty of Sciences, LOST, University Mentouri-Constantine (LOST Co.04.05).

Dried powder of aerial parts from the flowering plant of *C. omphalodes* was extracted with 70% MeOH. The MeOH extract was concentrated to dryness, the residue was dissolved in boiling water, and the concentrate was taken up with ethyl acetate and *n*-BuOH. The concentrated extract was evaporated and the residue was dissolved in small volumes of MeOH. The *n*-BuOH extract was applied to a column of polyamide MN SC6 and eluted with a gradient of toluene–MeOH with increasing polarity. Five flavonoids (**1–5**) contained in several fractions were isolated by preparative PC on Whatman 3 mm paper using 15% AcOH and BAW (*n*-BuOH–AcOH–H_2O, 4:1:5; upper phase) as solvents, and preparative TLC on silica gel using the systems AcOEt–MeOH–H_2O (10:1:1) and (10:2:1). Purification of each compound for spectral analysis was carried out using MeOH over Sephadex LH-20. The structures of these compounds were confirmed by UV, ^{1}H NMR, ^{13}C NMR, and MS analyses and by respective literature data.

Compound 1, $C_{15}H_{10}O_4$, mp 284–286°C. Characterized as chrysin [12].

Compound 2, $C_{17}H_{14}O_6$, mp 263°C. Identified as cirsimaritin [13].

Compound 3, $C_{18}H_{16}O_6$, mp 190–192°C. Identified as salvigenin [13].

Compound 4, $C_{16}H_{12}O_6$, mp 337–338°C. Characterized as chrysoeriol [13].

Compound 5, $C_{21}H_{20}O_9$, yellow powder. UV (MeOH, λ_{max}, nm): 272, 315. + $AlCl_3$/HCl: 283, 370; + NaOH: 279, 356; + NaOAc: 278, 359. ^{1}H NMR (400 MHz, DMSO-d_6, δ, ppm, J/Hz), 4.70 (1H, d, J = 9.8, H-1″ Glc), 6.31 (1H, s, H-6), 6.99 (1H, s, H-3), 7.60 (3H, m, H-3′, 4′, 5′), 8.19 (2H, d, J = 7.6, H-2′, 6′). [ES-MS]$^-$ *m/z* 415 [M – H]$^-$. Compound **5** was characterized as chrysin 8-*C*-Glc [13–15].

All the compounds are reported for the first time from the species.

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