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TRITERPENOIDS AND FLAVONOIDS FROM CHLOROFORM FRACTION OF *Dracocephalum peregrinum*

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The genus *Dracocephalum* contains above 30 species and is an important genus in the Labiatae family [1] due to its significant bioactivities [2]. The chemical constituents of *Dracocephalum* plants are mainly flavanoids [3, 4], terpenoids [5–7], cinnamic acid derivatives [8], and volatile oils [9, 10], but very few chemical and pharmacological studies have been reported on *Dracocephalum peregrinum* until now.

Herein we present the results from the investigation of triterpenoids and flavonoids from *Dracocephalum peregrinum* collected in the Xinjiang autonomous region, P. R. China, in August 2007. The air-dried and powdered whole grasses of the plant (10 kg) were refluxed with ethanol (75% v/v) three times for 2 h each time. After removal of the solvent under reduced pressure, the residue was partitioned sequentially with petroleum ether, chloroform, ethyl acetate, and *n*-butanol to give four portions. The chloroform portion (106 g) was subjected to silica gel column chromatography (200–300 mesh, 1.0 kg), eluting with the gradient $CHCl_3$–CH_3OH (10:0–20:1–5:1–2:1–0:1) to give five fractions: I (14 g), II (17 g), III (24 g), IV (11 g), and V (15 g).

Fraction I (14 g) was subject to silica gel column chromatography to afford six subfractions, and the second subfraction was purified over silica gel column chromatography, eluting with petroleum: acetyl acetate (10:1–5:1–2:1), to yield compounds **1** (8 mg) and **2** (15 mg). Fraction II (17 g) was purified over silica gel column chromatography, eluting with petroleum–acetyl acetate (5:1–2:1–1:1), to yield compounds **3** (126 mg), **4** (42 mg), **5** (8 mg), **6** (21 mg), and **7** (12 mg). The concentrated residue eluted by petroleum–acetyl acetate (1:1) was purified repeatedly over Sephadex LH-20, eluting with $CHCl_3$–CH_3OH (1:1), to give **8** (11 mg). Fraction III (24 g) was purified over silica gel column chromatography, eluting with $CHCl_3$–CH_3OH (10:1–5:1–2:1–0:1), to give five subfractioins. The first and second subfractions were subject to Sephadex LH-20, eluting with $CHCl_3$–CH_3OH (1:1), to give compounds **9** (6 mg), **10** (8 mg), and **11** (12 mg). The forth subfraction was purified over Sephadex LH-20 column chromatography, eluting with methol, to yield compound **12** (10 mg).

On the basis of the analysis of UV, PMR (600 MHz), ^{13}C NMR (150 MHz), NOESY, ^{1}H–^{13}C HMBC, HSQC, and mass spectra, these compounds were determined as lupeol (**1**) [11], betulin (**2**) [12], ursolic acid (**3**) [13], oleanolic acid (**4**) [12], betulinic acid (**5**) [12], 3-oxo-ursolic acid (**6**) [14], 3-palmitoylursolic acid (**7**) [15], 5-hydroxyl-4′,6,7-trimethoxylflavone (**8**) [16], 5-hydroxyl-3′,4′,6,7-tetramethoxylflavone (**9**) [17], acacetin (**10**) [3], apigenin (**11**) [4], and luteolin-7-*O*-*β*-D-glucoside (**12**) [4, 13]. All these compounds were isolated from *Dracocephalum peregrinum* for the first time, and compounds **6–9** were reported from the genus *Dracocephalum* for the first time. The triterpenoids and flavonoids reported herein imply that the main constituents of *Dracocephalum peregrinum* are in accordance with those of other species of the genus *Dracocephalum*.

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