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A GUAIANOLIDE FROM *JURINEA CARDUIFORMIS**

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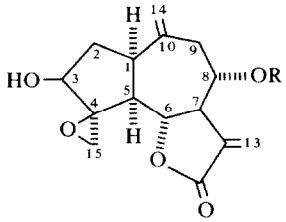
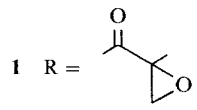
Key Word Index—*Jurinea carduiformis*; Compositae; Cynareae; sesquiterpene lactones; guaianolide.

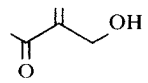
Abstract—8-Desacylrepin, a new guaianolide, has been isolated from *Jurinea carduiformis*.

The aerial parts of *J. carduiformis* Boiss. afforded, in addition to repin (**1**) [1] and janerin (**2**) [2], small amounts of a further lactone (**3**), the structure of which was deduced from the ^{1}H NMR data, especially by comparison with the spectra of **1** and **2**. The signals were assigned by spin decoupling starting with the four-fold doublet at δ 2.70 (H-7). Irradiation of the latter collapsed the methylene signals to singlets, a double doublet at 4.53 to a doublet and the three-fold doublet at 3.98 to a double doublet. The chemical shifts and the couplings of H-1 through H-3 were nearly identical with those of **1** and **2** indicating the same stereochemistry at C-1 through C-5. Compound **3** therefore is 8-desacylrepin.





1 R =



2 R =

3 R = H

Table 1. ^{1}H NMR spectral data of compound **3** (270 MHz, TMS as int. stand., $CDCl_3$)

H-1	3.34 *ddd*	H-9α	2.31 *dd*
H-2α	1.84 *ddd*	H-9β	2.78 *dd*
H-2β	2.47 *ddd*	H-13	6.25 *d*
H-3	3.98 *dd*	H-13′	6.12 *d*
H-5	2.05 *dd*	H-14	5.17 *brs*
H-6	4.53 *dd*	H-14′	5.01 *brs*
H-7	2.70 *dddd*	H-15	3.32 *d*
H-8	3.98 *ddd*	H-15′	3.05 *d*

J (Hz): 1,2α = 7; 1,2β = 10; 1,5 = 8; 2α,2β = 14; 2α,3 = 7; 2β,3 = 4; 5,6 = 11; 6,7 = 7,8 = 9; 7,13 = 3.5; 7,13′ = 3; 8,9α = 3.5; 8,9β = 5; 9α,9β = 14.

EXPERIMENTAL

The air-dried aerial parts (250 g) of *Jurinea carduiformis*, collected north of Teheran, were extracted with Et_2O and the resulting extract, after removal of saturated hydrocarbons by treatment with MeOH, was separated first by CC (Si gel). With Et_2O–MeOH (20:1), compounds **1**–**3** were eluted. Repeated TLC (Si gel, Et_2O–MeOH, 50:1) afforded 50 mg **1**, 35 mg **2** and 20 mg **3**. Compounds **1** and **2** had the same physical data as those reported in the literature.

8-Desacylrepin (**3**). Colourless gum, IR $\nu_{max}^{CHCl_3}$ cm^{-1}: 3605 (OH), 1760 (γ-lactone); MS *m/z* (rel. int.): 278 (M$^+$, 0.3), 260.104 (M − H_2O, 11) ($C_{15}H_{16}O_4$), 230 (260 − CH_2O, 12), 215 (230 − Me, 12), 91 (100).

$$[\alpha]_{24^\circ}^{\lambda} = \frac{589 \quad 578 \quad 546 \quad 436\,nm}{+54 \quad +61 \quad +69 \quad +114} \quad (c = 1.5, CHCl_3).$$

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* Part 330 in the series "Naturally Occurring Terpene Derivatives". For Part 329 see Rustaiyan, A., Nazarians, L. and Bohlmann, F. (1981) *Phytochemistry* **20**, 1152.