A New Sesquiterpene Lactones Glucoside from *Notoseris psilolepis*

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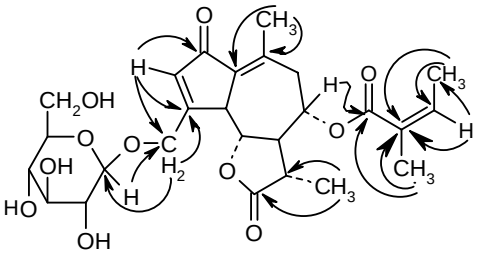
Abstract: A new sesquiterpene lactone glucoside, notoserolide C (**1**), was isolated from the whole plant of *Notoseris psilolepis* Shih. By means of spectral analysis including MS, NMR (^{1}H NMR, ^{13}C NMR, ^{1}H-^{1}H COSY, HMQC, HMBC) and X-ray diffraction, the structure of notoserolide C was established as cichorioside B angelate.

Keywords: *Notoseris psilolepis*, asteraceae, notoserolide C.

As a part of an investigation on plant of the genus *Notoseris* (Asteraceae), an endemic genus of seed plants of China[1], we studied the chemical constituents of *N. psololepis* Shih. A new sesquiterpene lactone glucoside, named notoserolide C (**1**) was isolated from the methanolic extract of the whole plant of *N. psilolepis* by repeated column chromatography (MCI GEL, normal and reversed phase silica gel). This compound showed antibacterial activity against *Bacillu cereus.*

Figure 1. The key HMBC correlations for **1**



Notoserolide C (**1**), was obtained from methanol as colorless crystals, mp 156~8℃ (dec.), $[\alpha]_D^{25}$ -55° (c 0.07, MeOH). Its molecular formula was assigned as $C_{26}H_{34}O_{11}$ by HRFABMS ($[M-H]^-$ *m*/*z* 521.1992, Calcd. 521.1964). The IR spectrum of **1** showed the presence of hydroxyl (3413 cm^{-1}) and carbonyl (1765, 1717, 1686 cm^{-1}) groups. On acid hydrolysis, glucose was detected by TLC. Since the signal of the anomeric proton of the glucose appeared at δ_H 4.40 with coupling constant 8 Hz, this sugar moiety should be β-orientated. Besides the glucosyl moiety, the ^{1}H-NMR spectrum exhibited a methyl

doublet at δ 1.19 (3H, d, J = 7 Hz), a vinyl methyl signal at δ 2.44 (3H, s) , an olefinic proton signal at δ 6.61 (1H, br s) and angeloyl signals at δ 6.23 (1H, q, J = 7 Hz), 2.01 (3H, d, J = 7 Hz) and 1.92 (3H, s). The ^{13}C-NMR spectrum was similar to that of cichorioside B[2] except for five signals due to the angeloyl moiety[3]. The long-range heteronuclear correlations (**Figure 1**) between H-15 and the anomeric carbon of the glucose, between H-8 and carbonyl carbon of the ester moiety revealed that the glucose moiety is located at C-15 and angeloyl at C-8. Analysis of ^{1}H-^{1}H COSY, HMQC and HMBC spectra allowed proton and carbon signals of **1** to be assigned as **Table 1**. Accordingly, **1** can be represented as cichoroside B angelate. The structure was unambiguously confirmed by X-ray analysis[3].

Table 1. ^{1}H-(500 MHz) and ^{13}C-(125 MHz) NMR spectral data for **1**（CD_3OD）

C	δ_C	δ_H	C	δ_C	δ_H
1	134.0(s)		ester moiety		
2	197.1(s)		16	167.8(s)	
3	134.9(d)	6.61, br s	17	128.5(s)	
4	171.7(s)		18	140.8(d)	6.23, q, 7Hz
5	49.7(d)	3.87, d, 8Hz	19	16.1(q)	2.01, d, 7Hz
6	82.2(d)	3.84, m	20	20.7(q)	1.92, s
7	59.4(d)	2.55, m	sugar moiety		
8	71.5(d)	5.00, m	1’	104.1(d)	4.40, d. 8Hz
9	45.6(t)	2.90, m	2’	75.1(d)	
10	148.6(s)		3’	78.0(d)	
11	41.7(d)	2.67, m	4’	71.5(d)	
12	179.1(s)		5’	78.0(d)	
13	15.2(q)	1.19, d, 7Hz	6’	62.7(t)	3.67, dd, 11, 7Hz
14	21.5(q)	2.44, s			3.88, d, 11Hz
15	69.6(t)	4.80, 4.87, d, 17Hz			

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References and Notes

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3. Crystallographic parameter of **1** have been deposited in the editorial office of CCL**.**

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