SUPPLEMENTARY MATERIAL

Two new abietane diterpenoid glycosides from *Clinopodium chinense*

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Abstract: Two new abietane diterpenoid glycosides, named clinopoditerpenes B (**1**) and C (**2**), were isolated from *Clinopodium chinese*. The structures of the new compounds were determined on the basis of extensive spectral analysis. Compound **1** exhibited cardioprotective effect against H₂O₂-induced apoptosis in H9c2 cells.

Keywords: *Clinopodium chinese*; diterpenoid glycoside; cardioprotective effect

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Table 1. ^1H and ^{13}C NMR data for **1** and **2**.

position	1^a		2^b	
	δ_{C} , type	δ_{H} (<i>J</i> in Hz)	δ_{C} , type	δ_{H} (<i>J</i> in Hz)
1	34.2, CH ₂	1.34, td, (12.6, 2.4) 3.24, m	35.7, CH ₂	1.42, br t, (12.6) 3.56, br d, (12.6)
2	27.5, CH ₂	1.60, m 1.66, m	29.5, CH ₂	1.87, m 1.95, m
3	75.9, CH	3.11, dd, (11.4, 4.2)	78.5, CH	3.54, dd, (12.6, 3.6)
4	38.7		40.4	
5	49.4, CH	1.66, dd, (15.0, 1.8)	53.5, CH	1.30, m
6	34.9, CH ₂	2.43, dd, (16.8, 1.8) 2.61, dd, (16.8, 15.0)	19.9, CH ₂	1.63, m 1.83, m
7	197.8, C		33.7, CH ₂	2.83, m 2.92, dd, (11.4, 4.2)
8	128.0, C		134.9, C	
9	138.5, C		134.7, C	
10	39.3, C		40.2, C	
11	147.5, C		149.1, C	
12	148.6, C		142.7, C	
13	131.7, C		137.4, C	
14	119.9, CH	7.37, s	118.6, CH	6.77, s
15	38.9, CH ₂	2.69, dd, (13.2, 7.2) 2.82, dd, (13.2, 5.4)	35.1, CH	4.45, m
16	65.9, CH	3.89, m	69.1, CH ₂	3.97, m 4.26, m
17	23.5, CH ₃	1.02, d, (6.6)	19.5, CH ₃	1.36, d, (6.6)
18	15.6, CH ₃	0.82, s	17.2, CH ₃	1.10, s
19	27.9, CH ₃	0.95, s	29.6, CH ₃	1.29, s
20	17.0, CH ₃	1.31, s	20.4, CH ₃	1.52, s
1'	105.8, CH	4.44, d, (7.8)	105.8, CH	5.27, d, (7.8)
2'	73.8, CH	3.30, m	85.5, CH	4.45, m
3'	76.0, CH	3.20, m	78.2, CH	4.36, m
4'	69.5, CH	3.21, m	71.1, CH	4.19, br t, (7.8)
5'	75.9, CH	3.26, m	79.3, CH	3.80, m
6'	60.7, CH ₂	3.50, d, (11.4) 3.67, br d, (9.0)	62.6, CH ₂	4.33, br d, (10.8) 4.45, br d, (10.8)
1''			107.3, CH	5.57, d, (6.6)
2''			76.7, CH	4.25, m
3''			78.5, CH	4.25, m
4''			71.6, CH	4.32, m
5''			79.2, CH	3.97, m
6''			62.8, CH ₂	4.35, m

^aSpectra obtained in DMSO-*d*₆. ^bSpectra obtained in pyridine-*d*₅.

zyd-15-4-fms_140414160316 #4 RT: 0.07 AV: 1 NL: 1.94E7
T: FTMS + p ESI Full ms [250.00-2000.00]

Figure S1. The HR-ESI-MS of 1.

Figure S2. ^1H NMR spectrum of **1** in $\text{DMSO-}d_6$.

Figure S3. ^{13}C APT spectrum of **1** in $\text{DMSO-}d_6$.

Figure S4. HSQC spectrum of **1** in DMSO-*d*₆.

Figure S5. HMBC spectrum of **1** in DMSO-*d*₆.

The figure displays two chemical structures, labeled 1 and 2, which are complex polycyclic molecules. Structure 1 is a pentacyclic compound with a central six-membered ring fused to four other rings. It features multiple hydroxyl groups and a glycosidic moiety. Structure 2 is a similar pentacyclic compound, but with a different substitution pattern, including a hydroxymethyl group. Both structures are annotated with curved arrows indicating correlations from 2D NMR experiments. Solid black arrows represent COSY (Correlation Spectroscopy) correlations, showing scalar coupling between protons. Curved black arrows represent HMBC (Heteronuclear Multiple Bond Correlation) correlations, showing long-range coupling between protons and carbons. A legend on the right side of the image defines the symbols: a solid black line for COSY and a curved black arrow for HMBC.

NOESYPSHW DMSO D:\ t

NAME HYX-15-4
EXPNO 3
PROCNO 1
Date_ 20140608
Time_ 1:29
INSTRUM spect
PROBHD 5 nm F400 BB-
PULPROG noesyph
TD 32768
SOLVENT DMSO
NS 16
DS 16
SFO1 600.1328 MHz
F2IDRS 3.212377 Hz
AQ 0.1556940 sec
RG 64
SW 76.000 sec
DE 6.50 usec
TE 300.2 K
DQ 0.0000763 sec
D1 2.03970183 sec
SFO2 600.1328000 sec
INQ 0.0001520 sec

===== CHANNEL f1 =====
NUC1 1H
P1 14.43 usec
PL1 0 dB
PL1W 39.55894470 W
SFO1 600.1328145 MHz
NUC2 1H
TD 256
SFO1 600.1328 MHz
F2IDRS 25.699013 Hz
SW 10.350 ppm
FREQC2 States-TFF1
SI 1024
SFO2 600.1300085 MHz
WDW QLINE
SSB 2
LB 0.00 Hz
GB 0
PC 1.00
SI 1024
FREQC1 States-TFF1
SF 600.1300085 MHz
WDW QLINE
SSB 2
LB 0.00 Hz
GB 0

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Figure S10. The experiment UV spectrum of **1**.

Figure S11. The IR spectrum of **1**.

zyd-15-10-ftms_140414160316 #3 RT: 0.05 AV: 1 NL: 3.36E7
T: FTMS + p ESI Full ms [250.00-2000.00]

Figure S12. The HR-ESI-MS of 2.

Figure S13. ¹H NMR spectrum of 2 in Pyridine-d₅.

Figure S16. HMBC spectrum of **2** in Pyridine-*d*₅.

Figure S17. COSY spectrum of **2** in Pyridine-*d*₅.

Figure S20. The IR spectrum of **2**.