

Phytochemical Study *Conyza Sophiaefolia*. Antiinflammatory Activity

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Abstract: From the aerial parts of *Conyza sophiaefolia* a new alicyclic furan diterpene was isolated and characterized as an E-isomer in C₆ of centipedic acid. In addition, the new clerodane type diterpene 12-*epi*-bacchotricuneatin A as well as two known related diterpenoids were identified. The flavone apigenin was also isolated. Structures were determined on the basis of spectroscopic evidence.

Introduction

The genus *Conyza* comprises about 50 species, which are mainly distributed in tropical and subtropical areas. It is well known that this genus produces sesquiterpenes, diterpenes, acetogenic lactones, flavones and cumarines.

Experimental

Plant Material

Conyza sophiaefolia (Asteraceae, Asteroideae, Astereae), was harvested in «El Volcán», February 1998, and identified by Ing. L. A. Del Vitto, E. M. Petenatti & O. S. Giordano. A Voucher specimen is deposited at the Herbario of UNSL N° 6758.

Isolation Procedure

The dried ground aerial parts were extracted with Me₂CO, the residue obtained was dissolved with MeOH-H₂O 9:1 and partitioned with *n*-hexane (Extract A) and chloroform (Extract B). These residues were subjected, several times, to a combination of chromatography procedures on Si gel 60 using mixtures of *n*-hexane-ethyl acetate as eluents and Sephadex LH 20 with methanol as eluent.

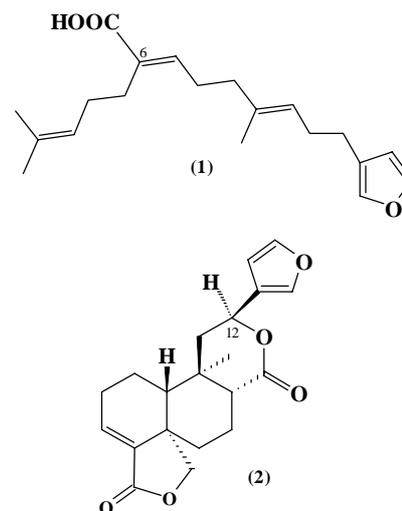
Result and Discussion

Hawtriwaic acid [1], 2β hidroxyhardwickiic acid [2], apigenin and the diterpenes **1**, 12-*epi*-

bacchotricuneatina A and **2** [3] were isolated from extract **B**. Structures were determined by EM, ^1H and ^{13}C -RMN (**Table 1**) and confirmed by bidimensional experiments (COSY, NOESY, ROESY, HMBC, HMQC).

Table 1.

H/C	δ_{H} (Compound 1)	δ_{C}
1	1.68 <i>br s</i>	25.7 <i>q</i>
2		132.1 <i>s</i>
3	5.19 <i>br t</i> (6.0)	124.1 <i>d</i>
4	2.10 <i>br t</i> (4.0)	28.0 <i>t</i>
5	2.25 <i>m</i>	28.7 <i>t</i>
6		131.7 <i>s</i>
7	6.72 <i>t</i> (7.3)	145.6 <i>d</i>
8	2.35 <i>m</i>	27.0 <i>t</i>
9	2.30 <i>m</i>	38.5 <i>t</i>
10		134.4 <i>s</i>
11	5.20 <i>br t</i> (6.8)	125.1 <i>d</i>
12	2.23 <i>m</i>	27.4 <i>t</i>
13	2.45 <i>br q</i> (7.5)	25.1 <i>t</i>
14		128.2 <i>s</i>
15	6.28 <i>br s</i>	111.2 <i>d</i>
16	7.31 <i>br s</i>	142.8 <i>d</i>
17	7.20 <i>br s</i>	139.2 <i>d</i>
18	1.60 <i>br s</i>	15.8 <i>q</i>
19		174.3 <i>s</i>
20	1.60 <i>br s</i>	17.6 <i>q</i>



*200 MHz, C_6D_6 .

*Mass fragments: $[\text{M}^+]$ $m/z=316$; $-\text{Me}=301$; $-\text{C}_6\text{H}_5=247$; $\text{pirilio}^+=81$; $\text{C}_5\text{H}_9^+=69$

The anti-inflammatory activity of all the extracts has been evaluated by paw edema test [4] (**Table 2**).

Table 2.

Product	Acute inflammation inhibit %				Dunnet's Test
	1H	3Hs.	5Hs.	7Hs.	
Acetonic extract	-	37	45(b)	49(a)	(a) $p < 0.02$
Chloroformic extract A	14	22	45(b)	35	(b) $p < 0.04$
<i>n</i> -hexane extract B	-	12	36	26	(c) $p < 0.002$
Phenylbutazone	55	65(d)	65(c)	52(a)	(d) $p < 0.0003$

References and Notes

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