Supplementary Files

The anti-serotonin effect of parthenolide derivatives and standardised extract from the leaves of *Stizolophus balsamita*

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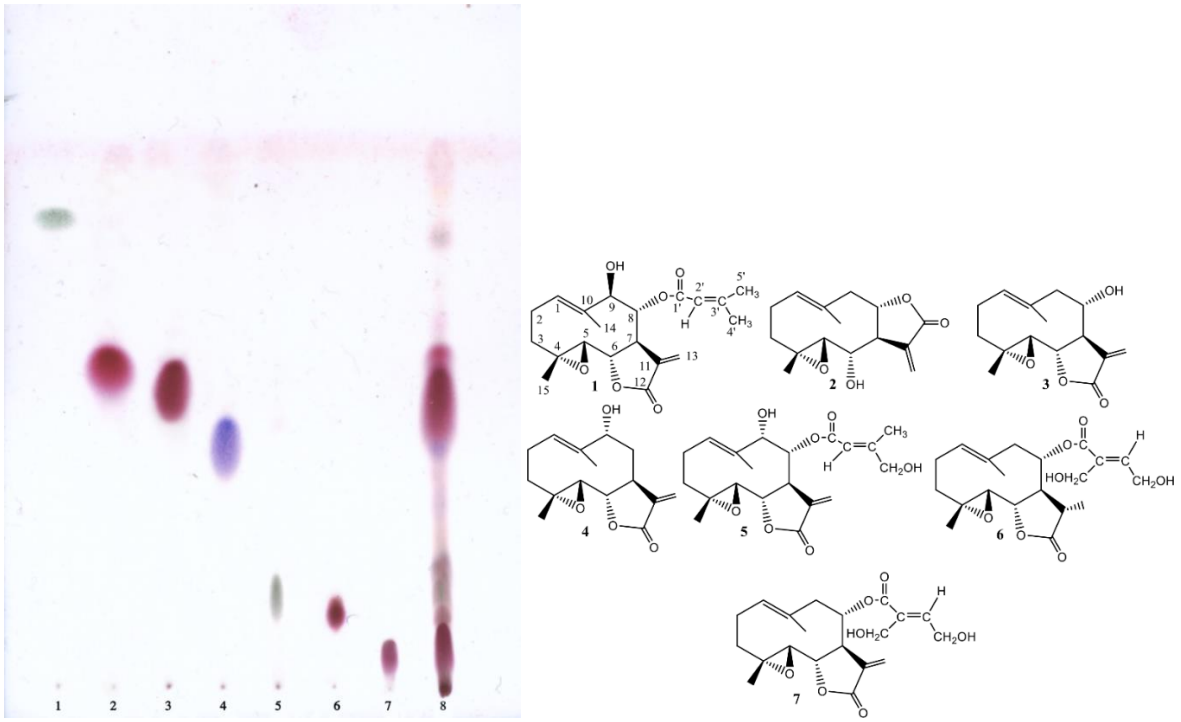
Figure 1. TLC of the purified CH_2Cl_2 extract and germacranolides isolated from the Stizolophus balsamita leaves. Adsorbent: silica gel; mobile phase: n-hexane – $(CH_3)_2$-CO 2:1; 1—balsamin; 2—izospiciformin; 3—stizolin 4—9a-hydroxyparthenolide; 5—8α-E-(4′-hydroxy)-senecioyloxy-9α-hydroxyparthenolide; 6—11β,13-dihydrostizolicin; 7—stizolicin; 8—purified CH_2Cl_2 extract of S. balsamita leaves.



The purple color of the spots of 4,5-epoxygermacranolides indicates the presence of an OH group at C-6 and a substituent at C-8 or the substituent only at C-8 (compounds **2**, **3**, **6** and **7**). The violet color of the spot indicates the presence of a hydroxyl group at C-9 and the absence of this group at C-8 (compound **4**). Finally, the green color of the spot of parthenolide derivatives shows the presence of two substituents.

Figure 2. The HPLC chromatograms of stizolin (S), izospiciformin (I) and stizolicin (Sc).

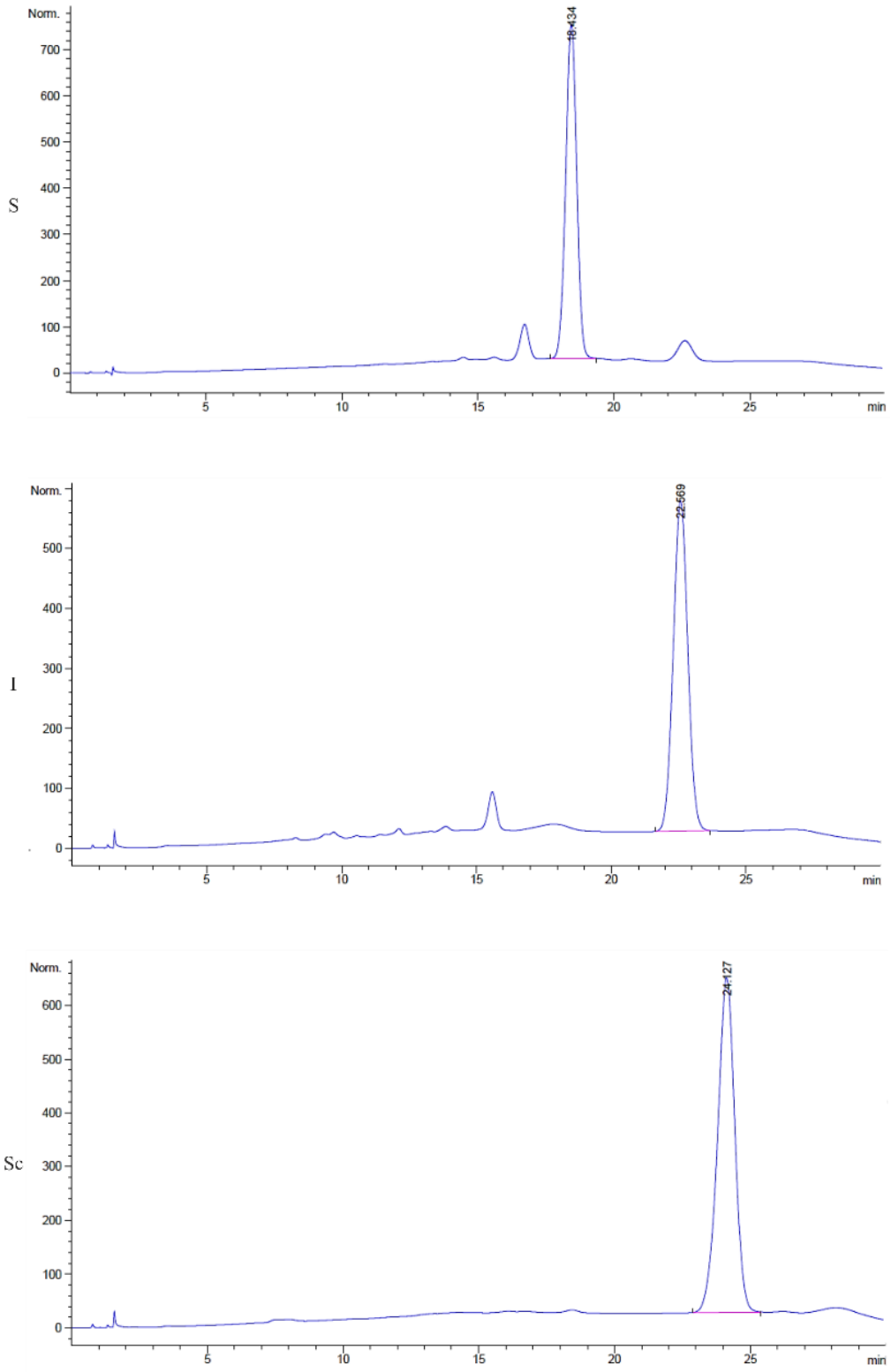


Figure 3. Concentrations of serotonin (mg/mL) in the stizolin sample and the control sample.

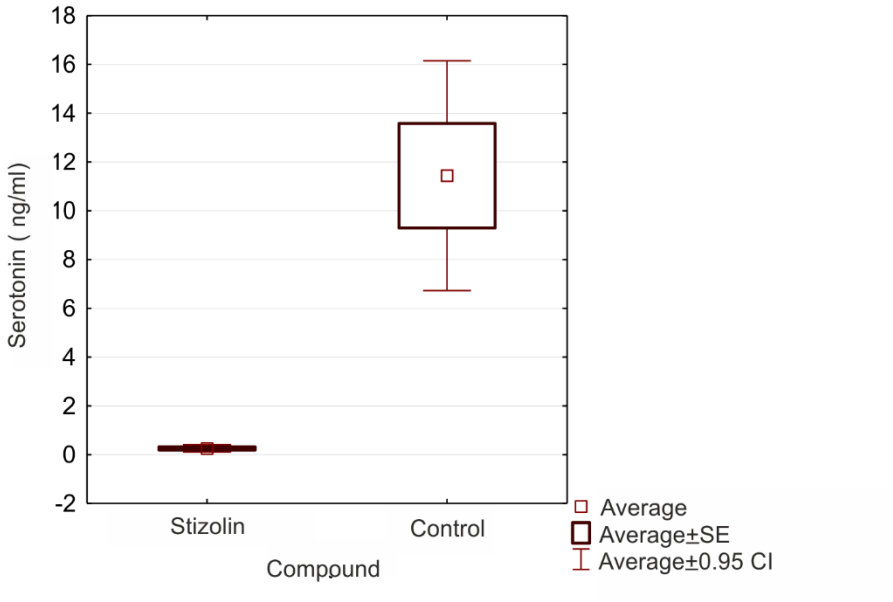


Figure 4. Concentrations of serotonin (mg/mL) in the isospiciformin sample and the control sample.

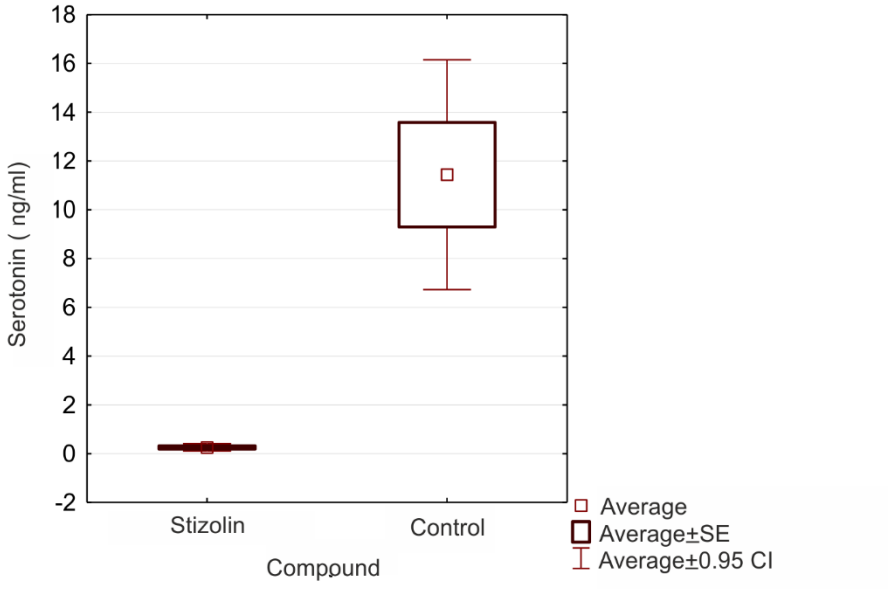


Figure 5. Concentrations of serotonin (mg/mL) in the stizolicin sample and the control sample. .

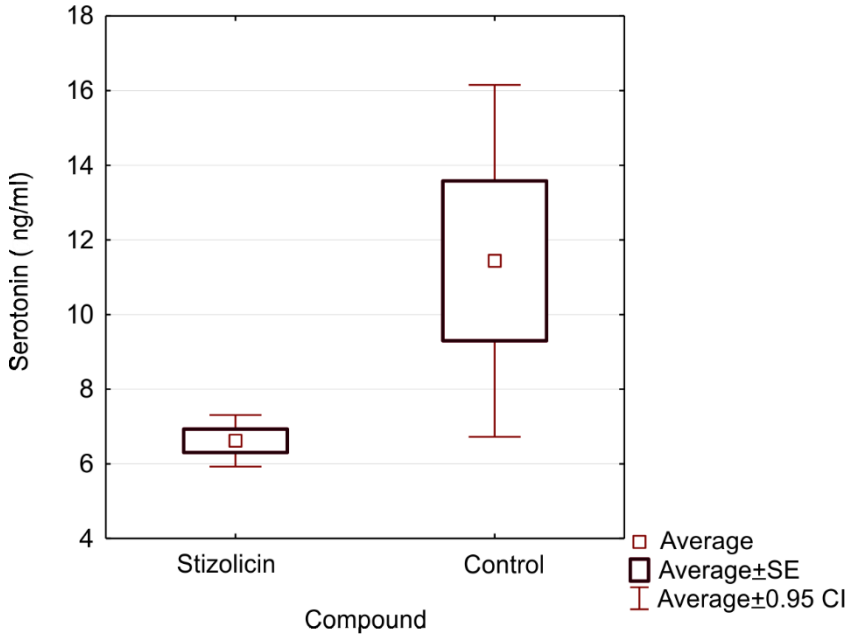


Figure 6. Concentrations of serotonin (mg/mL) in the methanol extract from the leaves of *S.balsamita* sample and the control sample.

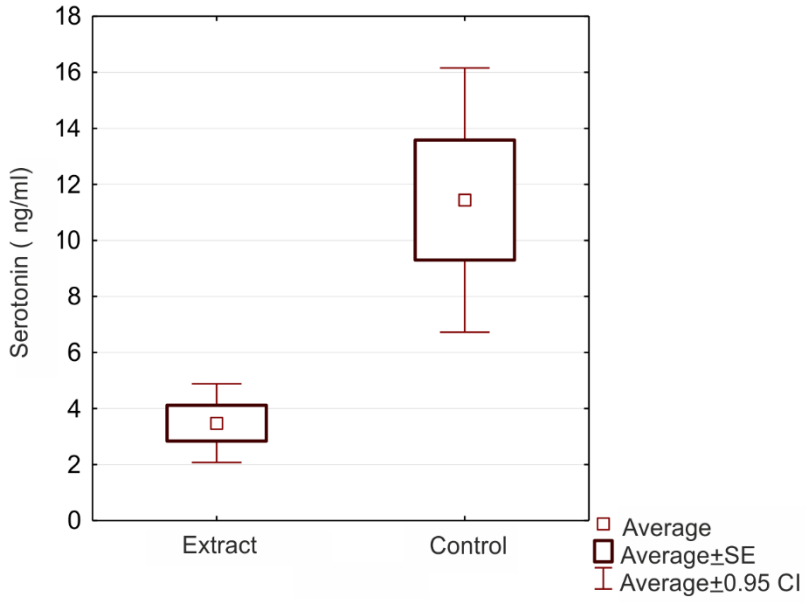


Table 1. ^{1}H NMR (600 MHz) spectroscopic data (δ_H in ppm, mult; *J* in Hz) of: izospiciformin (**2**), stizolin (**3**), and stizolicin (**7**).

Pos.	**2** [a]	**3** [a]	**7** [b]
1	5.36 bs	5.25 bd (12.1)	5.45 bd (10.5)
2a	1.21 m	2.43 m	2.52 dd (5.8;13.5)
2b	0.98 m	2.23 m	2.25 bd (13.6)
3a	2.13 m	2.15 m	2.13 dd (12.9; 6.0)
3b	1.34 m	1.24 m	1.29 m
5	2.66 d (8.9)	2.73 d (8.1)	2.85 d (9.3)
6	3.44 dd (8.9;9.6)	3.98 bt (7.4)	4.37 t (9.3)
7	3.00 m	3.09 m	3.59 m
8a	4.01 m	-	4.57 bdd (3.9; 2.7)
8b	-	3.88 m	-

9a	2.84 m	2.57b d (12.5)	2.70 dd (11.8; 11.6)
9b	2.14 m	2.43 d (12.2)	2.47 bd (12.1)
13a	6.46 dd (1.2; 3.0)	6.50 d (3.1)	5.80 d (3.0)
13b	6.28 dd (1.2; 2.6)	6.16 d (2.4)	6.20 d (3.4)
14	1.79 s	1.76 s	1.82 bs
15	1.28 s	1.28s	1.28 bs
3’	-	-	6.94 t (5.9)
4’	-	-	4.40 d (5.9)
5’	-	-	4.28 s

[a] in $CDCl_3$; [b] in CD_3OD; [c] overlapped signals.

Table 2. ^{13}C NMR (150 MHz) spectroscopic data of compounds **2**, **3** and **7**

C	**2** [a]	**3** [a]	**7** [b]
1	126.86	128.26	128.59
2	14.17	24.71	25.30
3	36.18	35.65	37.00
4	64.09	61.45	62.57
5	69.69	66.33	67.63
6	71.06	78.00	82.25
7	49.06	52.21	50.48
8	80.35	71.35	75.07
9	44.45	52.00	47.84
10	134.02	129.78	132.65
11	169.51	134.03	131.06
12	171.15	169.49	171.57
13	128.94	128.55	126.19
14	18.86	18.13	18.40
15	17.53	17.40	17.65
1’	-	-	167.92
2’	-	-	135.28
3’	-	-	147.02
4’	-	-	59.45
5’	-	-	56.78

[a] in $CDCl_3$; [b] in CD_3OD.