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Erratum
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ABSTRACT

The genus Salvia is the largest genus in the mint family (Laminacae), including nearly 1000 species which are widely distributed all over the world.The genus is reported for antioxidant, antimicrobial, and antiviral activities. Plants belonging to this genus are well known in folk medicine to treat epilepsy, aches, colds, bronchitis, and menstrual disorders. Salvia aethiopis is a perennial plant, known as Mediterranean or African sage. The ethanolic extract of aerial parts of S. aethiopis showed moderate level of inhibition in cannabinoid (CB1-37.0% displacement and CB2- 31.0% displacement) and opioid (Delta -46.3%, Kappa-45.3 % and Mu-32.9% displacement) receptors. Repeated silica gel column chromatography resulted in isolation of four compounds one new compound and three which were identified to be a sesquiterpene (spathulenol), and two sterols (β-sitosterol and β-sitosterol-3-O-β-D-glucoside). The structures of isolated compounds were determined using 1H and 13C NMR and MS spectral data. The isolated compounds showed no activity towards cannabinoid and opioid receptor assay.

INTRODUCTION & BACKGROUND

It is a goal of the Sourcing, Isolation and Acquisition core to isolate and identify active components from plant material. The genus Salvia is the largest genus in the mint family (Laminacae), including nearly 1000 species which are widely distributed all over the world. Genus Salvia is a rich source of essential oils, flavonoids, and terpenoids. The genus is reported to have antioxidant, antimicrobial, and antiviral activities. Plants belonging to this genus are well known in folk medicine to treat epilepsy, aches, colds, bronchitis, and menstrual disorders. Salvia aethiopis is a perennial plant, known as Mediterranean or African sage. In the United States it is best known as a noxious weed. It was probably introduced to North America as a contaminant of alfalfa seed but is native to Eurasia.

MATERIAL & METHODS

Plant material was collected during the flowering stages from foothill of Trans-Illi Alatau, Kazakhstan in June 2005. Is was authenticated by botanist Dr. Nadezhda G. Gemejiyeva, Botanist from the The Institute of Botany and

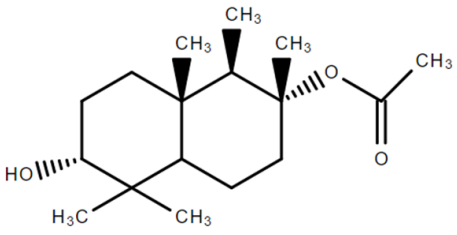
Phytointrodaction, Almaty, Kazakhstan (Boucher specimen no.7290/25).

Dried aerial parts of S. Aethiopis (0.17 kg) were ground in a Wiley-Mill plant grinder. Ground plant material was extracted using dichloromethane (1.9 L) at room temperature to yield 5.9 of DCM extract. The plant residue was further extracted using ethanol (1.7 L) producing 9.4 grams of ethanolic extract.

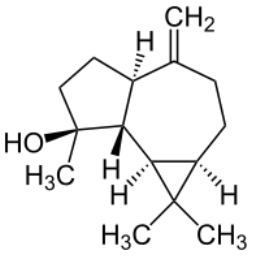
The ethanolic extract (4.1g) of aerial parts of S. aethiopis was loaded on a normal phase column and eluted with methyl-chloride-methanol gradient to yield twelve fractions. Fraction 2 (15 mg eluted DCM) showed a single spot on a TLC and was identified to be spathulenol, **Compound II**. Fraction 4 (1.2 g, 1% eluted MeOH- DCM) was subject to column chromatography using ethyl-acetate hexane gradient (1:9-1.1) to afford **Compound III (**15.0 mg). Fraction 8 (0.5 g eluted 5% MeOH-DCM) was purified on a silica gel column chromatography using CH2-CL2-MeOH gradient (1:0-9:1) to afford **Compound IV** (23.5 mg). Fraction 20 (0.75 g eluted 7% MeOH-DCM) was loaded on to a silica gel column chromatography using EtOAc-Hexane gradient (1:9-7:3) followed by DCM-MeOH (1:0-9:1) to afford **Compound I** (5mg).

RESULTS

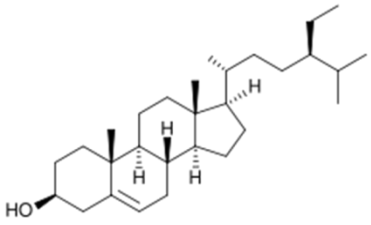
ISOLATED COMPOUNDS:



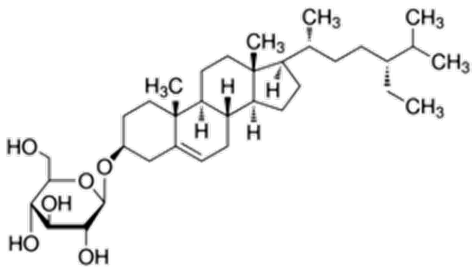
I



II



III



IV

TABLE 1: ^{1}H, ^{1}C, HMBC NMR data (500MHz, CDCL2) for Compound 1

S. No.	^{1}H NMR	^{1}C NMR (DEPT)	HMBC
1.	1.55	32.10 (T)	
2.	1.91M, 1.59M	24.99 (T)	
3.	3.35 (br,s)	75.71 (D)	
4.	-	37.42 (S)	
5.	1.53 m	48.03 (D)	
6.	2.34 m, 1.26 m	19.52 (T)	
7.	2.73 m, 1.71 m	38.84 (T)	
8.		86.29 (S)	
9.	2.27 m	55.02 (D)	C-12
10.		38.44 (S)	
11.	1.56 m, 1.28 m	29.75 (T)	
12.		178.41 (S)	
17.	1.48 (s)	19.89 (Q)	C-7,C-8, C-9
18.	0.94 (s)	28.33 (Q)	C-3, C-4,C-5, and C-19
19.	0.79 (s)	22.60 (Q)	C-3, C-4,C-5, and C-18
20.	0.82 (s)	15.65 (Q)	C-1, C-5,C-9, and C-10
$\underline{CH_3}CO$-	1.87 (s)	21.95 (Q)	CH_3CO-
$CH_3\underline{CO}$-		170.24 (S)	

DISCUSSION & CONCLUSION

The ethanolic extract of aerial parts of S. aethiopis showed moderate to weak level of inhibition toward delta and kappa opioid receptors (46.3% and 45.3 %, respectively).

Bioassay guided fractionation and purification yielded four compounds (I-IV): 3 alpha-hydroxy-8alpha-acetoxy-13,14,15, 16-tetranorlabdan-12-oic acid (I, new), spathulenol (II), sitosterol (III), and sitosterol-3-O-glucoside (IV). Compound I is a new natural product.

The activity of the isolated components from S. aethiopis did not show a high displacement for cannabinoid and opioid receptors. Further isolation shall continue with other species of plants of the Salvia genus with comparable bioassay results to find compounds active specific to these receptors that can be further studied for its effects on the body.

ACKNOWLEDGMENTS

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