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Article *in* Journal of Essential Oil Research · December 2011

DOI: 10.1080/10412905.1999.9701059

J. Essent. Oil Res., **11**, 21-22 (Jan/Feb 1999)

Composition of the Essential Oil of *Nepeta trachonitica* Post from Turkey

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Abstract

Water-distilled essential oil from the aerial parts of *Nepeta trachonitica* was analyzed by GC/MS. Sixty seven components were characterized representing 86.7% of the total components detected with spathulenol (22.2%) as the major constituent.

Key Word Index

Nepeta trachonitica, Labiatae, essential oil composition, spathulenol.

Plant Name

Nepeta trachonitica Post (1).

Source

Plant material was collected from Malatya: Beydagi on 10 August 1996 at an altitude of 2200 m in Turkey. Voucher specimens are kept at the Herbarium of the Faculty of Pharmacy, Anadolu University in Eskisehir, Turkey (ESSE 12163).

Plant Part

Air dried aerial parts were subjected to hydrodistillation for 3 h using a Clevenger type apparatus to produce oil in 0.09% yield.

Previous Work

None.

Present Work

The oil was analyzed by GC/MS using a Hewlett-Packard GCD system. Innowax FSC column (60 m x 0.25 mm) was used with helium as carrier gas. GC oven temperature was kept at 60°C for 10 min and programmed to 220°C at a rate of 4°C/min, and then kept constant at 220°C for 10 min and programmed to 240°C at a rate of 1°C/min. Split flow was adjusted at 50 mL/min. The injector and

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Received: December 1996
Accepted: January 1997

1041-2905/99/0001-0021$04.00/0—

detector temperatures were at 250°C. MS were taken at 70 eV. Mass range was from *m/z* 35 to 425. Library search was carried out using Wiley GC/MS Library and TBAM Library of Essential Oil Constituents. Relative percentage amounts were calculated from Total Ion Chromatogram by the computer. The compounds identified in the oil are as follows:

α-pinene (0.5%)
α-thujene (0.2%)
β-pinene (1.9%)
sabinene (4.1%)
α-terpinene (0.2%)
limonene (0.9%)
γ-terpinene (0.6%)
p-cymene (0.5%)
terpinolene (0.1%)
(E)-2-hexenyl butyrate (1.4%)
(Z)-3-hexenyl 2-methylbutyrate (0.6%)
(Z)-3-hexenyl isovalerate (1.3%)
α-campholenal (0.3%)
β-bourbonene (0.6%)
linalool (0.7%)
cis-sabinene hydrate (0.5%)
trans-p-menth-2-en-1-ol (0.3%)
pinocarvone (0.6%)
terpinen-4-ol (5.6%)
octyl butyrate (0.3%)
cis-p-menth-2,8-dien-1-ol (0.3%)
octyl 2-methylbutyrate (0.2%)
thuj-3-en-10-al (0.2%)
myrtenal (1.1%)
sabinaketone (0.2%)
octyl isovalerate (0.2%)
cis-verbenol (0.3%)
trans-pinocarveol (1.4%)
(E)-β-farnesene (0.5%)
trans-verbenol (1.4%)
p-mentha-1,8-dien-4-ol (0.4%)
α-terpineol (0.6%)
trans-sabinol (0.3%)
germacrene D (7.4%)
phellandral (0.2%)
bicyclogermacrene (3.5%)
naphthalene (0.3%)
δ-cadinene (0.2%)
γ-cadinene (1.0%)
cis-sabinol (0.4%)
cuminaldehyde (0.5%)
myrtenol (1.5%)
p-mentha-1,5-dien-7-ol (0.5%)
trans-carveol (0.4%)
geraniol (0.3%)
p-cymen-8-ol (0.5%)
(E)-geranylacetone (0.3%)
benzyl isovalerate (0.3%)
β-ionone (0.2%)
caryophyllene oxide (1.1%)
norbourbonone* (0.6%)
(E)-nerolidol (0.3%)
p-mentha-1,4-dien-7-ol (0.9%)
germacrene D-4-ol (0.3%)
cubenol (0.2%)
globulol (0.2%)
cumin alcohol (0.9%)
spathulenol (22.2%)
T-cadinol (3.5%)
T-muurolol (0.3%)
carvacrol (2.9%)
trans-α-bergamotol (1.2%)
α-cadinol (1.3%)
decanoic acid (0.4%)
benzyl benzoate (0.6%)
tetradecanoic acid (1.0%)
hexadecanoic acid (3.4%)

* Norbourbonone (= 15-nor-4-bourbonone = 11-norbourbonan-1-one), $C_{15}H_{22}O$, MW 206; *m/z* 164(7), 149(3), 123(19), 93(7), 81(100), 80(20), 79(14), 55(10), 53(6), 41(14)

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