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Composition of the Essential Oil from the Root of *Carlina acaulis* L. Asteraceae

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Composition of the Essential Oil from the Root of *Carlina acaulis* L. Asteraceae

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ABSTRACT: The steam distilled essential oil obtained in 1.3% yield from root of *Carlina* thistle (*Carlina acaulis* L., Asteraceae) growing in Serbia was analyzed by GC and GC/MS. The major compound was benzyl 2-furylacetylene (97.2%).

KEY WORDS: *Carlina acaulis* L., Asteraceae, essential oil, benzyl 2-furylacetylene.

PLANT NAME: *Carlina acaulis* L.

SOURCE: Wild plants were obtained from the mountainous regions of Suva Planina in Serbia. A voucher specimen has been deposited in the herbarium of the University of Belgrade.

PLANT PART: *Carlina acaulis* root was cleaned and dried at room temperature to produce an essential oil in 1.3% yield (1).

PREVIOUS WORK: The chemical composition of *Carlina acaulis* essential oil has not been the subject of study; only the main component of *C. acaulis* root was examined (2,3).

PRESENT WORK: The oil obtained was initially yellow when first produced but got darker on standing. It had a narcotic odor and a pungent taste. The GC and GC/MS analytical procedures used were as previously described (4). The compounds identified in the oil of *Carlina acaulis* root are shown in Table I.

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**Table I. Chemical composition of the root oil
of *Carlina acaulis***

Compound	Percentage
heptane	0.5
1,8-cineole	t
benzaldehyde	0.8
1-phenyl-2-propanone	0.2
(Z,E) α -farnesene	0.2
sesquiphellandrene	0.2
ar-curcumene	0.6
benzyl 2-furylacetylene	97.2

^acompounds listed in order of elution from a 25 m x 0.25 mm CP Wax 52 CB capillary column that was temperature programmed as follows: 50°C (5 min), 50°-220°C at 2°C/min; t = trace

The structure of benzyl 2-furylacetylene was confirmed by IR, ¹H-NMR, ¹³C-NMR and MS. Our results are in agreement with the previously published data (2,3).

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