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FLAVONOIDS OF *ARTEMISIA CAUCASICA*

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S U M M A R Y

23 wild *Artemisia* species grow in Turkey (1,2) and some of them have not yet been investigated chemically. This report is a part of the series on the chemical investigations of *Artemisia* species from Turkey (3-9).

Five flavonoids (5-hydroxy-6,7,3',4'-tetramethoxyflavone, apigenin, luteolin, apigenin 7-*O*-glucoside and luteolin 7-*O*-glucoside) have been isolated from the aerial parts of *Artemisia caucasica*.

Ö Z E T

Türkiye'de yetişen 23 *Artemisa* türünün (1,2) bazıları henüz kimyasal açıdan incelenmemiştir. Bu çalışma *Artemisia* türlerinin kimyasal yapısını araştıran bir seri incelemenin bir bölümünü oluşturmaktadır (3-9).

Artemisia caucasica türünün toprak üstü kısımlarından 5 flavonoit (5-hidroksi-6,7,3',4'-tetrametoksiflavon, apigenin, luteolin, apigenin 7-*O*-glikozit ve luteolin 7-*O*-glikozit) izole edilmiştir.

Keywords: *Artemisia caucasica*, flavonoids.

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INTRODUCTION

Artemisia caucasica Willd. (Compositae, tribe Anthemideae) was investigated previously for acetylenes (10) and sesquiterpene lactones (11). We now report the isolation of five flavonoids from the aerial parts of *A.caucasica*. This report is a part of the series on the chemical investigations of *Artemisia* species from Turkey (3-9).

Artemisia caucasica Willd., Sp.Pl.3(3): 1823 (1803) is tufted or hummock-forming perennial species and very like *A.splendens* Willd. distributed in Eastern Anatolia and Caucasia, N.Iraq and N.Iran, in high altitude 2600-4100 m, on the other hand *A.caucasica* grows usually lower altitude 900-2500m in Central Anatolia, Bulgaria, Romania, S.Russia, Crimea and Caucasia.

A.caucasica distinguished by having very densely pilose and usually slightly longer than broad capitula, mostly tranparent or yellowish-scarious, without obvious thickened folioceous outer phyllaries and inserted very obliquely corolla on ovary even in bud.

RESULTS

As a result of this work, 5-hydroxy-6,7,3',4'-tetramethoxyflavone (33 mg; ext.C); apigenin (4.7 mg; ext.E); luteolin (7 mg; ext E); apigenin 7-*O*-glucoside (4 mg; ext.E), and luteolin 7-*O*-glucoside (2.7 mg; ext.E) were isolated from the EtOH-C_6H_6 (C), EtOH-EtOAc (E) extracts.

EXPERIMENTAL

Plant Material: Aerial parts of *A.caucasica* were collected at the flowering period from Çorum province in Central Anatolia and the voucher specimen has been deposited in the Herbarium of the Faculty of Pharmacy, University of Istanbul (ISTE 58251).

Examined specimen: **A5** Çorum: Çorum-Merzifon, 28 km from Çorum, rocky and stony slopes, 900 m, 6.10.1987, N. and E.Özhatay, B.Çubukçu, ISTE 58251.

Extraction and Isolation: The dried plant material (600 g) was extracted in a Soxhlet apparatus with petroleum ether (yield 1.02%). The petroleum ether extract (A) was concentrated and then extracted with 60% EtOH. The concentrated EtOH extract was treated with $CHCl_3$ (B) (yield 0.081%). The residual plant material from the petroleum ether extraction was re-extracted with 95% EtOH in a Soxhlet apparatus. The EtOH extract was concentrated, diluted with H_2O, and extracted with C_6H_6 (C) (yield

2.9%), $CHCl_3$ (D) (yield 6%), and EtOAc (E) (yield 0.6 %), respectively. For the purification of flavonoids silica gel column chromatography, preparative TLC and PC were applied. The structures of the pure compounds were elucidated by Rf values, colour reactions, and spectroscopic methods (UV, ^{1}H-NMR) on comparison with authentic samples or with their data.

Detailed information of the isolation procedure and copies of the original spectra are obtainable from the author of correspondence.

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