

FLAVONOIDS OF *SALVIA MICROSTEGIA*

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SUMMARY

Three flavonoids, apigenin, apigenin 7-O-glucoside and chrysoeriol, have been isolated from the aerial parts of *Salvia microstegia* Boiss. et Bal.

ÖZET

Salvia microstegia Boiss. et Bal. bitkisinin toprak üstü kısımlarından üç flavonoid, apigenin, apigenin 7-O-glucosid ve chrysoeriol izole edilmiştir.

Key words: *Salvia*, flavonoids, apigenin, apigenin 7-O-glucoside, chrysoeriol.

INTRODUCTION

Salvia species have been extensively investigated (1-4) because of their potent therapeutic activities (5). In previous phytochemical studies of *Salvia microstegia* Boiss. et Bal. the isolation of three new diterpenoids, 10-acetylferuginol, 5, 11, 12-trihydroxyabieta-8, 11, 13-triene (1) and microstegiol (2) and also the isolation of two known diterpenoids, ferruginol and pisiferol have been reported. Microstegiol has been found to show cytotoxic activity. In this study the flavonoids of *Salvia microstegia* have been investigated. The interest in the chemistry of flavonoids is due to their various influences on biological phenomena (6). Some have been shown to increase capillary resistance and prevent

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haemorrhages; others have antibiotic, antitumor or oestrogenic effects. Their role in plant growth, in attracting pollinators and as phytoalexins has also been the subject of research.

RESULTS

In this chemical investigation of *Salvia microstegia*, which is a widespread species in East and South Anatolia (7), three flavonoids were obtained from the ethanol extract of the aerial parts. They were identified as apigenin, apigenin 7-O-glucoside and chrysoeriol by spectroscopic means and by TLC comparisons with authentic samples.

EXPERIMENTAL

Salvia microstegia Boiss. et Bal. was collected from Binboğa mountains (Maraş) in southern Turkey in July 1988. A voucher specimen (MARE 1564) has been deposited in the Herbarium of the Faculty of Pharmacy, Marmara University.

Dried and powdered aerial parts were extracted successively with petroleum ether, acetone and ethanol (1). The ethanolic extract (2.5 g) was chromatographed in a Polyclar (polyvinylpyrrolidone) column with chloroform, ethanol and water gradients. The isolated compounds were purified by rechromatography on Sephadex LH-20 columns eluted with methanol. The structures were determined by uv-vis (Varian Techtron model 635-D) spectrometry and by TLC comparison with authentic samples.

apigenin. UV λ^{MeOH} nm 338, 268; NaOMe 394, 328, 275; AlCl₃ 390, 350, 305, 275; AlCl₃-HCl 390, 350, 305, 275; NaOAc 344, 305, 273; NaOAc-H₃BO₃ 344, 305, 273; Rf (30% HOAc) 0.23.

apigenin 7-O-glucoside. UV λ^{MeOH} nm 325, 261; NaOMe 377, 265; AlCl₃ 378, 341, 290, 267; AlCl₃-HCl 378, 334, 292, 270; NaOAc 320, 261; NaOAc-H₃BO₃ 331, 264; Rf (30% HOAc) 0.43.

chrysoeriol. UV λ^{MeOH} nm 335, 267; NaOMe 400, 329, 254; AlCl₃ 382, 354, 270, 256; AlCl₃-HCl 380, 346, 266, 250; NaOAc 346, 270; NaOAc-H₃BO₃ 344, 266; Rf (30% HOAc) 0.14.

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