

T. C.  
MARMARA ÜNİVERSİTESİ  
ECZACILIK FAKÜLTESİ  
ANABİLİM DALI

**SALVIA ALBIMACULATA ÜZERİNDE ARAŞTIRMALAR II**

**CONSTITUENTS OF SALVIA ALBIMACULATA II**

Ali H. MERİÇLİ\* — Filiz MERİÇLİ\* — Nevin TANKER\*\*  
Mehmet KOYUNCU\*\*

**SUMMARY**

Apigenin, luteolin, apigenin 7-glucoside, luteolin 7-glucoside, ursolic acid, caffeic acid and chlorogenic acid have been isolated from the aerial parts of *Salvia albimaculata* and identified.

**ÖZET**

*Salvia albimaculata* türünün topraküstü kısımlarından apigenin, luteolin, apigenin 7-glikozit, luteolin 7-glikozit, ursolik asit, kafeik asit ve klorojenik asit izole edilerek teşhisleri yapılmıştır.

\* İ.Ü. Eczacılık Fakültesi, Farmakognozi Anabilim Dalı, Beyazıt/İSTANBUL.

\*\* A.Ü. Eczacılık Fakültesi, Farmasötik Botanik Bilim Dalı, Tandoğan/ANKARA.

## INTRODUCTION

There are 86 *Salvia* species growing wildly in Turkey (1). Most of them are used in folk-medicine particularly as a sage tea due to their volatile oils. The volatile oils of some *Salvia* species were investigated by GLC and reported previously (2-4). The flavonoids and terpenoids of some *Salvia* species were also investigated (5-9).

*Salvia albimaculata* is an endemic plant growing near Ermenek-Konya in Turkey. In this region a kind of tea is prepared from the aerial parts of the plant and used in folk-medicine for relieving abdominal pain and for treatment of colds. The plant has a special odour and contains 0.8 % volatile oil. The volatile oil of the plant was investigated by GLC and iso-borneol and camphor were determined as the major components (10).

In this research concerning the flavonoid compounds of *S. albimaculata*, some organic acids were also isolated and determined during the course of the study.

*Plant material* : *Salvia albimaculata* Hedge et Hub.-Mor. (Labiatae) was collected from Konya-Ermenek, Tekeçatı region in June 1982. A specimen is kept in Herbarium of the Faculty of Pharmacy of Ankara University (voucher AEF 12073).

*Extraction and isolation of the compounds* : The dried plant material (1.150 kg) was extracted in a Soxhlet apparatus with petroleum benzene. The petroleum benzene extract (A) was evaporated and then extracted with 60 % EtOH. The concentrated EtOH extract was treated with,  $\text{CHCl}_3$  (B).

The petroleum benzene exhausted material was extracted with 95 % EtOH in a Soxhlet apparatus. The EtOH extract was concentrated, diluted with  $\text{H}_2\text{O}$  and extracted with  $\text{C}_6\text{H}_6$  (C),  $\text{CHCl}_3$  (D) and  $\text{EtOAc}$  (E) respectively.

B extract (3.00 g) was chromatographed on Si gel (Merck 0.2-0.5 mm) with toluene- $\text{Me}_2\text{CO}$  (92:3, 95:5) and ursolic acid was obtained (32 mg).

D extract (5.77 g) was chromatographed on Si gel (Merck 0.2-0.5 mm) with toluene- $\text{Me}_2\text{CO}$  (90:10, 80:20) and apigenin (6 mg) and luteolin (13 mg) were obtained.

E extract (11.85 g) was chromatographed on Si gel (Merck 0.2-0.5 mm) with toluene-EtOH (4:1, 3:1) and apigenin 7-glucoside (12 mg) and luteolin 7-glucoside (21 mg) were obtained. caffeic acid (83 mg) and chlorogenic acid (42 mg) were also obtained from this extract.

The substances were identified by comparing with the authentic samples and by spectral analyses. The glycosides were subjected to acid hydrolysis. Ursolic acid was identified by its melting point and IR spectra.

## RESULTS AND DISCUSSION

As the result of chemical analyses, apigenin, luteolin, apigenin 7-glucoside, luteolin 7-glucoside, ursolic acid, caffeic acid and chlorogenic acid were isolated from the aerial parts of *S. albimaculata* and identified. However the results of the research has shown that *S. albimaculata* is not rich in flavonoids, it seems to be valuable with a chemotaxonomical approach.

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(Received April 24, 1987)