

URSOLIC ACID AND  $\beta$ -SITOSTEROL FROM

Ziziphora pamiralaica

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An extract of Ziziphora bungeana (family Labiatae), possesses cardiotonic, hypotensive, and antiarrhythmic activity [1].

We have studied the isoprenoids of Ziziphora pamiralaica Juz. In the epigeal part of the plant we have detected several substances of steroid and triterpenoid nature.

The air-dry comminuted herbage of the plant under investigation was treated with chloroform. The chloroform extract, after concentration, was chromatographed on a column of silica gel with elution by the solvent system benzene-ethyl acetate (10:1). A substance was isolated with a melting point of 136-138°C (from acetone), which was identified as  $\beta$ -sitosterol [2] from its mass and IR spectra and also by a direct comparison with an authentic sample in TLC.

Washing the column with the same solvent system led to fractions the rechromatography of which using the benzene-acetone (3:1) system gave a substance with mp 280-283°C (from ethanol),  $[\alpha]_D^{24} +70 \pm 2^\circ$  (c 1.0; chloroform), corresponding to ursolic acid [3, 4]. The IR, UV, mass, and PMR spectra of the compound that we had isolated and of ursolic acid coincided. The yield on the air-dry weight of the plant was 0.2%.

LITERATURE CITED

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