

In addition to the main steroid sapogenin (tigogenin), smilagenin, gitogenin, and chlorogenin have previously been isolated from the leaves of mound lily yucca growing in Georgia [1, 2].

By column chromatography and rechromatography on alumina and silica gel we have isolated another two steroid sapogenins from the total steroid sapogenins remaining after the isolation of tigogenin.

Sapogenin (I) - mp 181-182°C (from methanol), $[\alpha]_D^{20} - 34^\circ$ (c 1.0; chloroform), composition $C_{27}H_{48}O_2$. The substance did not undergo acetylation. Its IR spectrum contained absorption bands at 865, 900 > 920, and 995 cm^{-1} , which are characteristic for a spiroketal grouping of the 25R series; there was no absorption band at 3400-3600 cm^{-1} . The UV spectrum showed absorption at 205, 215, 265, and 271 cm^{-1} , and the IR spectrum at 3080, 1585, 785, and 740 cm^{-1} , which are characteristic for conjugated bonds in a benzene ring [3].

The results obtained corresponded to the physicochemical constants of luvigenin ((25R)-4-methyl-19-norspirosta-1,3,5(10)-triene) a sapogenin which has been isolated from Metanartheicum luteo-viride Maxim [4] but is encountered extremely rarely.

Sapogenin (II) - mp 267-268°C, $[\alpha]_D^{20} + 10^\circ$ (c 1.0; chloroform), melting point of the acetate 245-246°C, $[\alpha]_D^{20} - 1.2^\circ$ (c 1.0; chloroform). In TLC they appeared at the levels of authentic hecogenin and its acetate. The IR spectrum has an absorption band at 1710 cm^{-1} , which is characteristic for a carbonyl group. The IR spectrum of the acetate coincided completely with that for hecogenin [5]. The ^{13}C NMR spectrum showed signals at δ 213 (C=O); 109.0 (C-22) and 70.7 (C-3) [6].

Thus, the sapogenin that had been isolated was hecogenin - (25R)-3 β -hydroxy-5 α -spirostan-12-one. This is the first time that luvigenin and hecogenin have been isolated from the leaves of mound lily yucca and described.

LITERATURE CITED

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