PHYTOECDYSONES OF Ajuga turkestanica. IV

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As reported previously [1], cyasterone, ecdysterone, and the new photoecdysone turkesterone have been isolated from the leaves and roots of Ajuga turkestanica (Rgl.) Briq., family Labiatae. We have continued the study of the minor ecdysones of the roots of this plant.

The ethyl acetate fraction of the methanolic extract obtained by the method described previously [2] from 3 kg of raw material was subjected to repeated column chromatography on alumina and was rechromatographed on silica gel, the column being eluted with a mixture of chloroform and ethanol with increasing concentrations of the latter. This yielded 28 mg of a weakly polar compound (0.001% of the weight of the raw material; R_f 0.69; SiO_2+7% of gypsum; chloroform–ethanol (4:1); thin-layer chromatography), $C_{29}H_{40}O_8$, with mp 225-236°C (chloroform–ethanol). The ecdysone obtained had $\lambda_{max}^{C_2H_5OH}$ 234, 275-285 nm (plateau) (log ε 4.73; 3.19); ν_{max}^{KBr} 3350 cm^{-1} (OH), 1713 cm^{-1} (C=O at C-12), 1693 cm^{-1} (δ-lactone), 1675 cm^{-1} (cyclohexenone). The mass spectrum of this compound (MKh 1303, 210°C, 40 eV) contained the peaks for ions with m/e 516 (M^+, 3.5%) 498 ($M-H_2O$; 53%), 480 ($M-2H_2O$, 17.6%), 377 (5.9%), 360 (47%), 359 (100%), 341 (8.2%), 316 (10.5%), 315 (10.5%), 314 (14%), 183 (40%), 139 (59%) and 111 (26.5%).

The facts given enabled the phytoecdysone obtained from A. turkestanica to be identified as ajugalactone. The latter was first found in A. decumbens Thunb. [3].

LITERATURE CITED

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