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We have continued a study of the flavonoid composition of *Ajania fastigiata*, family Compositae. A methanolic extract from the epigeal mass was concentrated and purified with petroleum ether. From an aqueous methanolic extract chloroform extracted a substance $C_{18}H_{16}O_7$ with mp 197-199°C (methanol) — a flavone aglycone [R_f 0.93, in the BAW (4 : 1 : 5) system; 0.97 in the benzene-acetic acid-water (125 : 72 : 3) system].

IR spectrum, cm^{-1} : 3400 (—OH group), 1670 (C=O), 1620, 1520 (aromatic system), 1470, 2850 (—OCH₃).

The compound contains three methoxy groups (determination by Zeisel's method). On its alkaline degradation, vanillic acid was found, which shows that one of the methoxy groups is present in position 3'. According to the results of UV spectroscopy, the substance has two hydroxy groups, in position 4' and 5: λ_{max} with MeOH 276, 342 nm; with CH₃COONa 270, 346 nm; with CH₃COONa + H₃BO₃ 276, 346 nm; with AlCl₃ 262, 282, 368 nm. From the low bathochromic shift in the long-wave region on the addition of AlCl₃ [1], and also from the dark coloration of the aglycone in UV light when treated on paper with a solution of AlCl₃ [2] it may be concluded that the second methoxy group in the substance is present in position 6. Demethylation with pyridine chloride led on chromatography to a spot with R_f 0.54 in the BAW (4 : 1 : 5) system and immobile in 15% CH₃COOH, which is characteristic for 6-hydroxyluteolin [3]. The demethylation products gave a positive Bargellini reaction.

The NMR spectrum of the trimethylsilyl ether [4] had the following signals: m, 7.2 ppm (2 H) (H-2', 6'); d, 6.7 ppm (1 H, J = 8 Hz) (H-5'); s, 6.43 ppm (1 H) (H-8); s, 6.21 ppm (1 H) (H-3); while singlets at 3.85, 3.72, and 3.63 ppm (3 H each) relate to methoxy groups in positions 6, 7, and 3'. Acetyl derivative: C₂₂H₂₀O₉ · 0.5 H₂O, mp 165-167°C (methanol), R_f 0.6 in the ethyl acetate-chloroform (1 : 1) system; NMR spectrum (deuteroacetone): m 7.5 ppm (2 H) (H-2', 6'); d, 7.14 ppm (2 H) (H-8,5'); s, 6.54 ppm (1 H) (H-3); while singlets at 3.94, 3.84, and 3.70 ppm (3 H each) correspond to the methoxy groups in positions 6, 7, and 3', a singlet at 2.28 ppm (3 H) relates to an acetyl group in position 5, and a singlet at 2.20 ppm (3 H) to an acetyl group in position 4'.

The results obtained show that the substance has the structure of 4'-5-dihydroxy-3',6,7-trimethoxyflavone. This compound has not been found previously in plants, and we have called it fastigenin.

LITERATURE CITED

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