

In an investigation of Peucedanum ruthenicum M. V. (Russian hog's fennel) collected in the Agul region, Dagestan ASSR, in July, 1973, we have isolated furocoumarins [1, 2] - peucedanin and ( $\pm$ )-oxypeucedanin hydrate from the umbels of the plant, peucedanin from the roots, and ( $\pm$ )-oxypeucedanin hydrate from the stems and leaves. In addition to these compounds, we have isolated  $\beta$ -sitosterol from the umbels. These substances were identified from the absence of depression of the melting points of mixtures with authentic samples, from their IR spectra, and from their Rf values on chromatography with markers in a thin layer of  $\text{Al}_2\text{O}_3$ .

The ground umbels of Russian hog's fennel (0.526 kg) were extracted with chloroform [3]. This gave 65 g of resin (12.35% on the weight of the air-dry material), which was dissolved in 30 ml of chloroform and was chromatographed on a column of  $\text{Al}_2\text{O}_3$  (Brockman activity grade III). The ratio of  $\text{Al}_2\text{O}_3$  to resin was 10.8:1. The substances were eluted from the column with petroleum ether (fractions 1-7) and with petroleum ether - chloroform (1:1) (fractions 8-26). The volume of each of the fractions was 200 ml.

After the eluent had been driven off from fractions 1 and 2, a mixture of ethereal and fatty oils remained (2.20%). On standing in the cold it deposited crystals of ( $\pm$ )-oxypeucedanin hydrate (0.002%). Fractions 3-13 contained peucedanin (0.70%) and fractions 14-20 contained  $\beta$ -sitosterol.

From 1.706 kg of the roots of the plant we obtained 339 g of resin [3] in the form of a crystalline mass (19.87%). A solution of 70 g of this mass in 30 liters of chloroform was passed through a column at an  $\text{Al}_2\text{O}_3$ :resin ratio of 8.6:1. The substances were eluted with petroleum ether with the collection of 200-ml fractions.

Fractions 1 and 2 yielded a mixture of ethereal and fatty oils (0.50%), and fractions 3-59 gave peucedanin (0.701%).

The stems with leaves (0.424 kg) were extracted with trichloroethylene [3]. This gave 11.2 g of resin (2.66%), which was dissolved in 10 ml of chloroform and chromatographed on a column at an  $\text{Al}_2\text{O}_3$ :resin ratio of 19:1. The substances were eluted with gasoline (fractions 1-3) and with gasoline - chloroform (1:1) (fractions 4-12). Fraction 1 yielded ethereal and fatty oils (0.52%), while fractions 2-9 gave a crystalline residue, which was passed through a column of silica gel ( $8 \times 1.5$  cm).

The substances were eluted with chloroform (20 ml) and with propanol (30 ml). The alcoholic eluates yielded ( $\pm$ )-oxypeucedanin hydrate (0.05%). When they were chromatographed in a thin layer of  $\text{Al}_2\text{O}_3$  the presence of traces of peucedanin (?) in them was detected in UV light.

## LITERATURE CITED

1. G. K. Nikonov, Tr. VILAR, No. 11, 180 (1959).
2. G. A. Kuznetsova, Natural Coumarins and Furocoumarins [in Russian], Leningrad (1967).
3. Yu. A. Dranitsyna, S. Sh. Kerimov, and G. V. Pigulevskii, Zh. Prikl. Khim., 38, 1172 (1965).