PHENOLIC GLYCOSIDES OF THE BARK OF SALIX ELBURSENSIS

V. A. Kompantsev and A. L. Shinkarenko

Khimiya Prirodnykh Soedinenii, Vol. 6, No. 3, p. 370, 1970

UDC 547.913

Continuing a study of the phenolic compounds of the bark of Salix Elbursensis Boiss. [1], we have isolated two glycosides: salicortin and salicin. Finely ground fresh bark, 1.0 kg, from branches of plants 2 to 4 years old was exhaustively extracted with ethanol–methanol (1 : 1). The alcoholic extracts were combined and evaporated in vacuo at a temperature not exceeding 50–60° C to a small volume, diluted with water, and placed in the refrigerator for a day. The dirty green precipitate was separated off, and the filtrate was additionally treated with chloroform. The purified aqueous extract was deposited on a column of polyamide powder (60 × 9 cm) and eluted with water. The aqueous eluates were combined and exhaustively extracted with ethyl acetate. The extracts were evaporated and placed in the refrigerator. After 2–3 days, salicortin (acylated salicylsalicin) began to crystallize with mp 140–142° C (absolute ethanol), $[\alpha]_D^{20}$ −165° (c 1.42, water, l 0.2 dm); mp of the acetate 90–92° C (95% methanol), $[\alpha]_D^{20}$ −21° (c 1.08, chloroform, l 0.2 dm).

On paper chromatography in a butan-1-ol–xylene–CH_3COOH–H_2O (6 : 4 : 2 : 8) system salicortin showed up after treatment with Millon's reagent in the form of a bright yellow spot (R_f 0.51) [2].

The mother solution, after the elimination of the precipitate of salicortin, was deposited on a column of cellulose (50 × 8 cm) and was eluted with butan-1-ol–xylene–water (2 : 8 : 8), 50-ml fractions being collected. No phenol glycosides were found in the first fractions, the glycoside salicortin was eluted from the 20-th to the 26-th fraction, followed by a mixture of salicorton and salicin, and the 34-th to 45-th fractions yielded pure salicin (saligenin O-β-D-glucopyranoside) $C_{13}H_{18}O_7$, mp 199–201° C (ethyl acetate saturated with water), $[\alpha]_D^{20}$ −62° (c 1.12, water, l 0.2 dm); mp of the acetate 131–133° C (aqueous methanol), $[\alpha]_D^{20}$ −23° (c 0.97, chloroform, l 0.2 dm) [13].

REFERENCES

1. V. A. Kompantsev, KhPS [Chemistry of Natural Compounds], 5, 323, 1969.
2. H. Thieme, Pharmazie, 11, 725, 1964.
3. H. Thieme, Pharmazie, 471, 1964.

26 January 1970

Pyatigorsk Pharmaceutical Institute