

LACTONES OF *Inula magnifica*

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In studying *Inula magnifica* Lipsky growing in Transcaucasia, we found that the epigeal part and, particularly, the roots each contain a considerable amount of lactones with R_f 0.93, 0.80, 0.70, and 0.59 [chromatography on Silufol plates, benzene-methanol-ethyl acetate (12:3:1) system; spots revealed with vanillin-sulfuric acid and with methanol] [1].

The dried roots (30 g) were comminuted and steeped in 300 ml of chloroform. The extract was evaporated to dryness and the residue (2 g) was chromatographed on a column of silica gel which was then eluted with petroleum ether and with mixtures of petroleum ether and ethyl acetate (from 5 to 40%), 50-ml fractions being collected. The eluates obtained were distilled, and the substances were purified further by crystallization from 70% and 50% aqueous methanol. Two isomeric sesquiterpene lactones (1.0945 g, 3.65%) with the composition $C_{15}H_{20}O_2$, mp 76-78°C (I) and 113-115°C (II) were isolated.

Their physicochemical properties and a comparison of them with literature data [2, 3] permitted the assumption that substance (I) was alantolactone and (II) isoalantolactone. The NMR and IR spectra of (I) and (II) were identical with the spectra of the compounds mentioned [2-4]. The identity of (I) with alantolactone was also confirmed by a mixed melting point of (I) and an authentic sample of alantolactone which we isolated from the roots of *Inula helenium* L.

Thus, *Inula magnifica* is another species of the family Compositae in which the lactones mentioned have been found. In this plant, as also in *Inula racemosa* Root [3], isoalantolactone predominates in the lactone fraction.

The presence of alantolactone has previously been reported in *Inula grandis* Schrenk., having been identified by its composition, melting point, and one of its derivatives [5, 6]. We have investigated chloroform and petroleum ether extracts and the essential oil of the roots of this species (collected from various growth sites during the vegetation period), but in no case have we found alantolactone or its isomer. A substance with mp 79-79.5°C present in this species proved to be a lactone of the elemene type - igalan [1].

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