

PHENOLIC COMPOUNDS OF THE EPIGEAL PART OF VALERIAN

I. PHENOLIC CARBOXYLIC ACIDS AND FLAVONOIDS

A. S. Rybal'chenko, N. S. Fursa,
and V. I. Litvinenko

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We have investigated 111 samples of *Valeriana officinalis* L. (common valerian) [1] collected in the Ukrainian SSR for the presence of phenolic compounds. For detailed analysis we used samples of *V. exaltata* Mikan and *V. nitida* Kreyer, isolated as systematic species from the polymorphic Linnaean species *Valerian officinalis* [2-4]. The species were determined by K. E. Koreshchuk (Zaporozh'e Medical Institute). As the initial raw material we took the leaves and flowers of *V. exaltata* collected in July 1969 in the environs of the town of Litin, Vinnitsa oblast, and *V. nitida* in the village of B. Mikhailovka, Dnepropetrovsk oblast. The raw material was extracted three times with ethanol, the extracts were combined and concentrated under vacuum, and the residue was diluted with water and filtered. The purified extracts were subjected to two-dimensional paper chromatography in the solvent systems BAW (4:1:2) (first direction) and 15% CH₃COOH (second direction). It was found that the epigeal part of the plants contained not less than 10 phenolic carboxylic acids and about 20 flavonoids, consisting of aglycones and glycosides. By preparative paper chromatography and fractional chromatography on a column of polyamide solvent using as eluents mixtures of chloroform and ethanol of increasing concentration [5], from the ethyl acetate fraction of the aqueous extract we isolated nine substances (I-IX) in the individual state. Substance (IV) was isolated only from the epigeal part of *V. exaltata* and (VIII) from *V. nitida*. The remaining substances were common to both species.

On the basis of qualitative reactions [6], UV spectroscopy with ionizing and complex-forming additives [7-9], physicochemical constants, and a comparison with authentic samples, the substances isolated were identified as caffeic acid (I), chlorogenic acid (II), isochlorogenic acid (IX). Luteolin and quercetin derivatives pre-(VI), luteolin (VII), diosmetin (VIII), and luteolin 7-O- β -D-glucoside. Luteolin and quercetin derivatives predominate in the epigeal part of *V. exaltata*, and sometimes kaempferol is found there. The main component of the epigeal organs of *V. nitida* is a bioside of diosmetin. The results of two-dimensional paper chromatography of extracts from samples of different growth sites, and also samples cultivated in the territory of the USSR, show that both the qualitative and the quantitative composition of the flavonoids are specific for the plants investigated.

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