UDC 633.81

THE FATTY OIL OF HELLEBORUS ABCHASICUS

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Khimiya Prirodnykh Soedinenii, Vol. 4, No. 2, pp. 129-130, 1968

The investigations that we have carried out have shown that the hypogeal part of the Georgian endemic plant Helleborus abchasicus, like the previously studied species of the genus Helleborus L. [1], contains a large number of bufadienolide glycosides. From the roots and bark of Helleborus abchasicus we have obtained a highly active group of eight glycosides, including korelborin "K" and korelborin "P". It has been established by paper-chromatographic analysis that the glycoside composition of Helleborus abchasicus is not very different from the composition of Caucasian hellebore [2].

In the isolation of the cardiac glycosides from the roots and bark of Helleborus abchasicus we obtained as byproduct 18% of a (yellow) oil which exhibited an antitumoral activity in a biological experiment.

The fatty oil has the following constants: d_{20}^{20} 0.9317, n_{20}^{20} 1.4794, acid No. 153.5, saponification No. 222.3, iodine No. 174.5%; unsaponifiable 1.4%, moisture content and volatile matter 6.2%.

To determine its fatty acid composition, the oil was subjected to methanolysis with 5% hydrochloric acid in methanol. The resulting fatty acid methyl esters were purified by preparative thin-layer chromatography [3,4] and were analyzed on a "Khrom 1" gas-liquid chromatograph with a flame ionization detector at a temperature of 180° C. The stationary phase was 10% of poly(ethylene succinate) on Chromosorb.

In this way we established that the oil from the hypogeal parts of Helleborus abchasicus contains linoleic, oleic, stearic, and palmitic acids.

On standing at room temperature, the oil of Helleborus abchasicus deposited palmitic acid.

From the unsaponifiable fraction of Helleborus abchasicus we isolated a crystalline substance with mp 136° C which on a paper chromatogram [5] gave a single spot in the region of β-sitosterol.

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30 October 1967

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