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CAROTENOIDS OF Aloe arborescens

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The carotenoid composition of aloe (Aloe arborescens Mill.) has been determined by the method of B. G. Savinov and S. E. Kudritskaya [1]. The carotenoids were extracted from the aloe leaves with a mixture of petroleum ether and ethanol, after which the extracts obtained were saponified and concentrated. Separation was carried out by column chromatography on magnesia and zinc oxide and also by thin-layer chromatography on alumina. The individual substances isolated were investigated with the aid of a SF-10 spectrophotometer. The carotenoids were identified from their colors and the distribution of the zones on a chromatogram, by the chromatography of mixed samples of the zones isolated with known carotenoids, and by the performance characteristic color reactions.

The total amount of carotenoid pigments was determined by a colorimetric method [2]. It amounted to 12.86 µg/ml of the crude mass, or, calculated to dry matter, 200.0 µg/ml.

A total of six carotenoids was isolated, of which five were identified. Their amounts in the aloe leaves, expressed as percentage of the total amount of carotenoids, are given below:

β-Carotene	11.6
β-Zeacarotene	15.2
Cryptoxanthin	12.5
Lutein (xanthophyll)	34.8
Violaxanthin	17.9
Unidentified carotenoid	8.0
Total	100.0

The main carotenoid of the aloe was lutein, which possesses no vitamin A activity. The sum of the vitamin-A-active carotenoids (β-carotene, β-zeacarotene, and cryptoxanthin) amounted to 50% of the total amount of aloe carotenoids.

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