

The chromatographic study of carrot roots

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Carrot (*Daucus carota* L. subsp. *sativus* (Hoffm.) Roehl.) is a representative of the parsley, or carrot, family (*Apiaceae*). The plant is well-known for its fleshy root of orange-red or yellow colour used as a food product. At the same time carrot is a popular remedy due to the high content of carotene.

Fresh carrots or fresh carrot juice is prescribed to people suffering from hypo- and avitaminosis A, pregnant women and lactating mothers to increase the milk secretion, to people whose profession is connected with eyestrain, in cases of myocardial infarction, angina pectoris, upper respiratory tract disorders, nephrolithiasis and urolithiasis, and as a complementary remedy in conjunctivitis, keratitis, blepharitis and retinal exhaustion.

Carrot is also used as a mild laxative in chronic diarrhea and haemorrhoids, increases intestinal peristalsis, suppresses the development of putrefactive processes in it. The plant is widely used as a diuretic in kidney disorders. Carrot improves the body tone, causes rejuvenating effect, helps to eliminate skin defects, due to what it is included in a variety of masks for dry and sagging skin, promotes excretion of radionuclides and blood cholesterol.

However, despite the wide usage of carrot roots in medicine its chemical composition is not studied well enough which can be explained by the presence of wide range of its varieties cultivated in Ukraine. That's why the aim of our work was the chromatographic study of carrot root alcohol extracts. The chromatography process was carried out in the following solvent systems: I dimension – n-butanol-acetic acid-water (4:1:2) and II dimension – 15 % acetic acid. This has helped to reveal the presence of at least 14 compounds on the chromatogram. The presence of certain classes of compounds was determined by the fluorescence in the UV-light and after chromatogram derivation with reagents (ammonia vapours, 10 % sodium hydroxide alcohol solution, 1 % aluminium chloride alcohol solution). 5 compounds had violet fluorescence which allowed to attribute them to hydroxycinnamic acids. The other nine compounds were classified as flavonoids, besides, five of them – as aglycones and four – as glycosides.

The preliminary chromatographic study of carrot roots provides the basis for the further profound study of its flavonoid and hydroxycinnamic acids composition and also quantitative determination of the abovementioned biologically active compounds.