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FLAVONOIDS OF PHYSALIS ALKEKENGI PLANTS OF THE SOLANACEAE FAMILY

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ABSTRACT

Rutin flavonoid was identified for the first time in the Physalis alkekengi plant growing in Uzbekistan.

Keywords: Ph. alkekengi, flavonoid, quercetin, rutin.

INTRODUCTION

Phúsalis is a genus of perennial herbaceae in the Solanaceae family, reaching up to 1.3 m in height [1]. The name "physalis" means "bubble" in Greek into Russian, which indicates the interesting shape of the capsule in which the fruit-berry is enclosed. Hence the other name of the plant – bladderwort. Physalis is native to South America. About 100 species of this exotic plant are known, but only 2 of them are edible and cultivated: vegetable - Mexican and sweet - strawberry. Physalis is grown on an industrial scale in the southern regions of Europe and Asia, in Central America.

The fruits, leaves and roots of the plant are endowed with medicinal properties that are actively used in folk medicine. People call the plant differently - ground cranberry, dog cherry, bladderwort, emerald berry. Traditional healers use it as a diuretic and as a means to epithalize tissues, as well as in the treatment of kidney stones, gout and joint rheumatism. According to some reports, physalis has anti-inflammatory and analgesic effects [2].

The chemical composition of the bladderwort is, without exaggeration, unique. Many active substances are found in berries: organic acids, tannin, physalin, vitamins A, C, B1, B2, B6, K, tannins, polyphenol, flavonoids, pectin, fiber, fatty oils, magnesium, zinc, calcium, iron, potassium, fiber. The leaves are abundant in steroids, carotenoids, flavonoids, and phenolcarboxylic acids. The roots contain alkaloids such as pseudotropin, cuskgigrin, tropin, and tigloidin.

Flavonoids of plants of the genus Physalis are poorly studied. We have studied the presence of a sum of flavonoids in a plant of the species Physalis: Ph. alkekengi, growing in the Tashkent region on the territory of Uzbekistan.

Table **Quantification of flavonoid content in the organs of the plant Physalis alkekengi by HPLC**

Item No.	Specimen Name	Quantitative content µg/mL		
		Quercetin	rutin	Luteolin
1	Phüsalis alkekengi (stems)	-	18,98	35,98
2	Phúsalis alkekengi (leaves)	-	96,00	48,67
3	Physalis alkekengi (корни)	-	-	

By the method of high-performance liquid chromatography (HPLC), the quantitative content of individual flavonoids in 3 organs of the plant was determined: luteolin, quercetin and rutin. The results of the analyses are presented in the table. An interesting fact is the absence of the flavonoid quercetin in the leaves and stems and three flavonoids in the roots of the plant. Thus, it has been established that the flavonoid rutin was first discovered in a plant of the genus Physalis - Ph. alkekengi of the nightshade family (Solanaceae).

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