Phytochemical analysis of the underground organ of medicinal Momordica charantia

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Abstract. In this article, it is necessary to study the medicinal properties of the medicinal plant Momordica charantia L in folk medicine, and first of all to know their chemical composition. We determined the flavonoids in the phytochemical composition of the underground (root) part of the medicinal plant Momordica charantia L using the liquid chromatography method. In this research, we have provided information about this plant, which is native to India, is grown in Asian countries and is used in folk medicine, as well as the chemical composition of the plant.

Key words: chromatography, flavonoid, steroid, momordica charantia, rutin.

Kirish Momordica charantia is also popularly known as Indian cucumber and it contains amino acids, saponins, oils, alkaloids and phenols. Momordica fruits also contain a large amount of B vitamins, carotene, vitamin C and calcium. It should be noted that the roots of the whole Momordica charantia plant are useful because they contain the highest concentration of carotene (provitamin A). Carotene is very useful for our whole body. Vitamin C contained in its seeds regulates redox processes in the human body, it maintains the normal state of blood vessels, helps oxygen and useful trace elements to enter tissues, ensures blood clotting and eliminates inflammatory processes in the body, improves immunity and restores the nervous system after stressful situations.[1].

Our research aims to determine the phytochemical (flavonoids) content of the underground (root) part of Momordica charantia L. We did this using the following method.

Flavonoids in the sample were determined using liquid chromatography. 5-10 g of the sample is taken on an analytical scale and placed in a 300 ml flat flask. 50 ml of 70% ethanol solution is added to it. The mixture was heated at 70-800C under vigorous stirring for 1 hour, equipped with a magnetic stirrer, reflux condenser, and then stirred at room temperature for 2 hours. The mixture is cooled and filtered. 25 ml of 70% ethanol is added to the remaining part and re-extracted 2 times. The filtrates were combined and filled to the mark with 70% ethanol in a 100 ml volumetric flask. The resulting solution is spun in a centrifuge at a speed of 6000-

8000 rpm for 20-30 minutes. The resulting solution was taken from the top for analysis. [5].

In the literature, phosphorus, acetate buffer systems and acetonitrile were used as eluents for the determination of Steroids and Flavonoids with YuSSX. We used a phosphate buffer system and acetonitrile.

Chromatographic conditions:

Chromatograph Agilent-1200 (equipped with an autodoser)

- Column Exlipse XDB C 18 (reversed-phase), 5 µm, 4.6 x 250 mm

-Diode array detector (DAD), 254 nm, 272 nm identified.

-Reading speed 0.8 ml/min

- Eluent phosphate buffer: acetonitrile:

0-5 min 95:5,

6-12 min 70:30,

12-13 min 50:50,

13-15 min 95:5,

thermostat temperature 300C, -10 µl injected amount (vcol)

First, the working standard solutions and then the prepared working solutions were introduced into the chromatograph.

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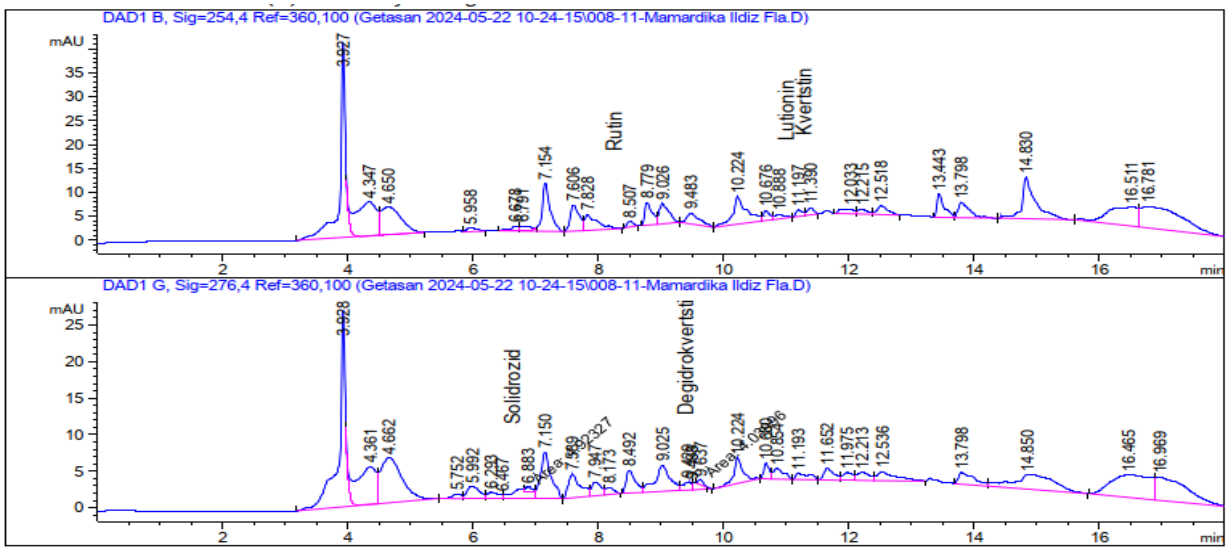
Flavonoids	***Mamardica* radicle**
	Concentration mg/g
Dihydroquercetin	9,15
Luthionine	5,1
Rutin	25,08
Seneroside	7,1
Quercetin	11,12

Salidroside	4,17

When we analyzed the flavonoids in the roots of Momordica charantia plant, we found that digidoquercitin was 9.15 g, luteinin 5.1 g, rutin 25.08 g, seneroside 7.1 g, quercetin 11.12 g, salidroside 4.17 g.

Chemicals chromatogram of the root of Momordica charantia L: flavonoids



CONCLUSION

In summary, there are many compounds of medicinal value, among which flavonoids are important. These compounds reduce the fragility of blood vessels, improve the permeability of blood vessels, lower blood lipids and cholesterol, as well as prevent and treat cardiovascular and cerebrovascular diseases such as hypertension, cerebral hemorrhage, ischemic heart disease in the elderly, and used for treatment. Therefore, in our study, we analyzed the flavonoids in the root part of the Momordica charanti plant.

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