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CHEMICAL COMPOSITION OF BROCCOLI AND ITS USE IN MEDICINE

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Abstract*. This article presents information on the composition of the blueberry (Scutullaria comsa) plant, which grows in the Fergana Valley, and its properties, as well as some synthetic drugs used to lower blood pressure.*

Keywords*: scutullaria comsa, blood pressure, synthetic drugs, wagonin, liquiriton, rutin, kokamaron, asikhon, food additive.*

INTRODUCTION

Today, studying the chemical composition of medicinal plants in the flora of the world, identifying the plants that contain natural biologically active compounds necessary for the human body, effective in the treatment and prevention of diseases, is one of the urgent issues. In this regard, it is important to study the chemical composition of medicinal plants growing in Uzbekistan, develop natural, biologically active food supplements based on them that help to increase the body's immunity, restore health, and use them widely in folk medicine [1,2].

In this work, the chemical composition of the blueberry plant (Scutullaria comsa) growing in the village of Poromon, Yangikurgan district, Namangan region, as well as the properties of some natural compounds in this plant, and the results of a comparative analysis with some synthetic drugs used in medicine to lower blood pressure are presented.

It is known that currently synthetic drugs with a strong effect, such as ramipiril, furasimed, enalapril, larista, are used to lower and normalize blood pressure. However, as a result of the decomposition of the synthetic compounds contained in these drugs in the body, as mentioned above, they affect the functioning of important organs such as the liver, bile, kidneys, and spleen, causing them to be damaged [3]. Therefore, we conducted research to determine the chemical composition of medicinal plants that have the property of lowering and normalizing blood pressure.

As a result of our research, 4-4.5% of flavonoids were found in the root of Scutellaria comosa plant. As a result of hydrolysis of the baicalin compound in the root, it has been proven that glucuronic acid, baicalein (trioxyflavone), waggonin (dioxy-methoxyflavone), pyrocatechins up to 2.5%, resins, starch, and flavoring substances are formed. It was determined that 10% of flavonoids found in leaves and stems belong to glucuronic acid and scutellarein compounds formed when scutellarin is hydrolyzed. It has also been shown that the stem and leaves of Scutellaria comosa contain steroid saponins (up to 7%), glycosides and essential oils. At the same time, the above-ground and underground parts of the blueberry (Scutellariacomosa) plant were collected from the village of Poromon, Yangikorgon district, Namangan region, and their chemical composition was studied. During the study, 105 volatile chemicals were isolated. Among them are caryophyllene oxide (4.76%), 2-methyl-crotonic acid (2.83%), (E)-2-hexenal (4.23%), ethylbenzene (1.41%), 3-pentene-2 -ol (3.70%), 1,8-cineole (1.13%), 1,1-dimethyl-3-chloropropanol (1.00%), styrene (0.98%), 1-hexanol (1 .51%), it was proved that there are main compounds such as furfural (1.05%) [3]. We also studied the chemical composition of other types

of blueberries belonging to Scutellariaaturcum and compared it with the chemical composition of Scutellaria comosa.

As a continuation of these researches, in the process of studying the chemical composition of the roots of the Scutellaria comosa plant, we identified the presence of 75 volatile substances. Also, 4 flavanoid substances and beta cytosterol were isolated from Kokamaron plant [4-6].

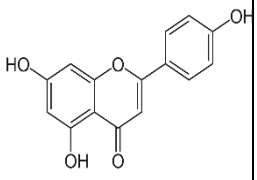
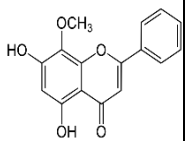
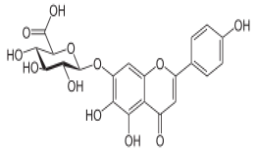
Today, in the pharmaceutical industry, a number of effective drugs containing many flavonoids, such as rutin, liquiriton, flakumin, datiskan, lacrizid, lespeflan, flarcarbin, flamin, silibor, have been created on the basis of the blueberry plant. Cucumber flavonoids have a strong antioxidant effect. For example, waggoninflavonoid has a blood pressure-lowering, neuroprotective effect. Also, blueberries contain other chemical compounds that have the effect of lowering blood pressure[7-10]. The chemical composition of the broccoli plant and the abundance of macro- and microelements, useful natural compounds, made it necessary to create new food additives based on the above-ground part of this plant. Therefore, we have developed new natural, biologically active food additives called "Kokamaron" and "Asikhon" based on the Kokamaron (Scutellaria comosa) plant, and these new biologically active food additives are listed under the category of food additives in the Ministry of Health of the Republic of Uzbekistan. received and allowed to use in practice.

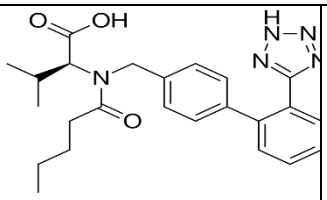
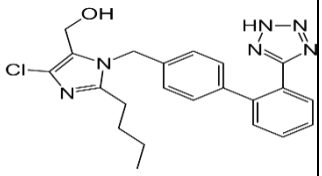
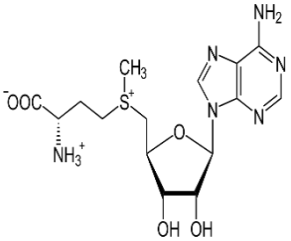
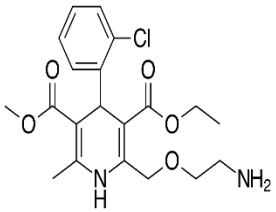
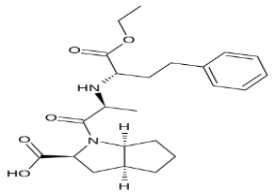
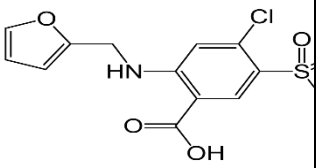
In order to study the healing properties of these food additives, we conducted clinical trials in "Golden Valley Medicine" in Andijan region, Jalakuduq district, and "Murod Shifo" hospitals in Torakorgan district, Namangan region. Test results show that these food additives can lower blood pressure, restore body immunity, strengthen blood vessel walls, improve heart rate, reduce swelling, fight against microbes, expel bile and urine, improve liver function, treat stomach ulcers, normalize blood pressure, and strengthen muscles. -showed that it has the properties of eliminating self-contraction, purifying blood and improving blood circulation in the body, restoring liver function and improving bile secretion. Especially in lowering blood pressure, the use of these decoctions prepared on the basis of the Kokamaron plant has been proven to be more effective than synthetic drugs in the treatment of the disease.

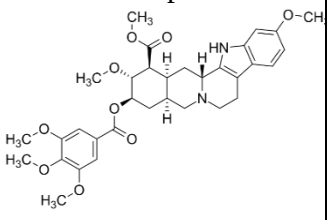
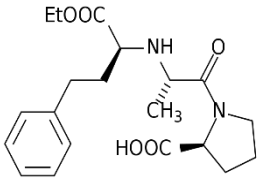
In this study, the antihypertensive properties of the new "Kokamaron" and "Asikhon" food supplements were analyzed by comparing them with some synthetic antihypertensive drugs currently in use. The results of the comparative analysis are presented in the following table:

Table 1.

A comparative analysis of natural compounds and some synthetic drugs in jujube

	Substances in blood pressure reducing offices	Substances extracted from broccoli		
		apegenin 	Voganin 	Skutellarein-7-O-β-D-glyukopiranozid 
1	Valsartan	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5

				
2	Losartan 	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5
3	S-adenosylmethionine 	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5, 6
4	Amlodepin 	1,2,4,5	1,2,3,4,5	1,2,3,4,5
5	Ramipiril 	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5
6	Furasimed 	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5,6

7	Reserpine 	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5
8	Enalapril 	1,2,3,4,5	1,2,3,4,5	1,2,3,4,5

(Note: 1. C-C bond, 2. C=O carbanyl group, 3. OH hydroxyl group, 4. Aromatic property, 5. Benzene ring, 6. Pyran)

As can be seen from the table above, the natural compounds in the Scutullaria comsa plant are chemically similar to synthetic drugs that lower blood pressure. That is why these food additives help to lower and normalize blood pressure.

CONCLUSION

In short, all types of Kokamaron plant contain biologically active substances necessary for the human body. Especially, the Kokamaron (Scutellaria comosa) plant growing in the Fergana Valley is distinguished by the abundance of useful compounds in its composition compared to others. Therefore, the new natural, biologically active food supplements "Kokamaron" and "Asikhon" prepared on the basis of this plant can restore the body's immunity, strengthen the walls of blood vessels, improve heart rate, reduce swelling, fight against microbes, expel bile and urine, and improve liver function. It has beneficial properties such as improvement, treatment of stomach ulcers, normalization of blood pressure, elimination of spontaneous muscle contractions. At the same time, these natural, biologically active food supplements have been proven to be effective in lowering blood pressure, treating and preventing cardiovascular diseases.

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