

PHARMACOLOGICAL PROPERTIES AND CHEMICAL COMPOSITION “MOMORDICA CHARANTIA L”

¹Samadov B.Sh., ¹Jalilova F.S., ¹Ziyaeva D.A., ¹Sharipova D.S., ¹Ozodova N.X., ¹Norova H.U., ²Jalilov F.S.,
³Dubinina N.V., ³Kudina O.V.,

¹Bukhara State Medical Institute, ²Tashkent Pharmaceutical Institute,
³National University of Pharmacy, Kharkiv, Ukraine,

✓ **Resume,**

Unusual in appearance, pomegranate fruits, similar to small bright yellow cucumbers, are increasingly found growing in the southern regions of our country. This exotic plant from the pumpkin family, which is native to India, has an equally original name – momordica.

Keyword: *Momordica, momordica charantia, Botanical description, chemical composition, E. coli, antiviral activity, vitamins.*

ФАРМАКОЛОГИЧЕСКАЯ СВОЙСТВА И ХИМИЧЕСКИЙ СОСТАВ “MOMORDICA CHARANTIA L”

¹Самадов Б.Ш., ¹Джалилова Ф.С., ¹Зияева Д.А., ¹Шарипова Д.Ш., ¹Озодова Н.Х., ¹Норова Х.У.,
²Джалилов Ф.С., ³Дубинина Н.В., ³Кудина О.В.,

¹Бухарский государственный медицинский институт, ²Ташкентский фармацевтический институт,
³Национальный фармацевтический университет, Харьков, Украина,

✓ **Резюме,**

Необычные по своему внешнему виду плоды граната, похожие на небольшие ярко желтые огурцы, все чаще можно встретить, произрастающими в южных регионах нашей страны. Это экзотическое растение из семейства тыквенных, родиной которого является Индия, имеет не менее оригинальное название – момордика.

Ключевые слова. *Момордика, момордика харанция, ботаническое описание, химический состав, кишечная палочка, противовирусная активность, витамины.*

“MOMORDICA CHARANTIA L” FARMAKOLOGIK XUSUSIYATLARI VA KIMYOVIY TARKIBI

¹Samadov B.Sh., ¹Jalilova F.S., ¹Ziyaeva D.A., ¹Sharipova D.S., ¹Ozodova N.X., ¹Norova H.U., ²Jalilov F.S.,
³Dubinina N.V., ³Kudina O.V.,

¹Buxoro tibbiyot instituti, ²Toshkent farmasevtika instituti,
³Milliy farmasevtika universiteti, Xarkov, Ukraina,

✓ **Резюме,**

Turfa ko'rinishdagi mayda yorqin sariq bodringga o'xshash anor mevalari mamlakatimizning janubiy hududlarida tobora ko'payib bormoqda. Yurti Hindiston bo'lgan qovoq oilasidan olingan bu ekzotik o'simlik teng darajada o'ziga xos nomga ega - momordika.

Kalit so'z. *Momordika, momordica charantia, botanik tasnifi, kimyoviy tarkibi, ichak tayoqchasi, virusga qarshi aktivlik, vitaminlar.*

Introduction

MOMORDICA (lat. Momordica L.) is a herbaceous climbing annual or perennial vine from the Pumpkin family (Cucurbitaceae). It has carved leaves, fragrant flowers and unusual fruits, ripe-like exotic bright orange flowers. It has many names: Indian or yellow cucumber, crocodile cucumber, mad melon, Indian pomegranate, balsamic pear, etc. the Genus of plants includes about 20 species of annual or perennial lianas. As cultivated plants are usually grown MOMORDICA CHARANTIA (lat. Momordica charantia L) [6].

The purpose of this work was to study the Botanical characteristics and distribution range of species of the plant genus MOMORDICA (lat. Momordica L.), to study the pharmacological properties, raw material composition, micro and macro elements, to conduct a method of quantitative determination in the fruit of the medicinal plant MOMORDICA charantia (lat. Momordica

charantia L) by inductively coupled plasma mass spectrometry (ISP-MS) [5].

Material and methods

To study the chemical composition of MOMORDICA seeds, 0.0500-0.5000 g of the exact weight of the test substance is weighed on analytical scales and transferred to Teflon autoclaves. Then the autoclaves are filled with the appropriate amount of purified concentrated mineral acids (nitric acid (x/h) and hydrogen peroxide (x/h)). Autoclaves are closed and placed on the Berghof microwave decomposition device with the MWS-3+ software of a similar type of microwave decomposition device. Determine the decomposition program based on the type of test substance, indicate the degree of decomposition and the number of autoclaves (up to 12 PCs.) [11]. After decomposition, the contents in autoclaves are quantitatively transferred to 50 ml or 100

ml volumetric flasks and the volume is brought to the label with 0.5% nitric acid. Determination of the test substance is carried out on the device ISP-MS or a similar device optician emission spectrometer with inductively coupled argon plasma. In the determination method, specify the optimal wavelength of the micro or macro elements to be determined, at which they have the maximum emission. In the construction of the sequence of analyses, the quantity in mg and the degree of its dilution in ml are indicated. After receiving the data, the true quantitative content of the substance in the test sample is automatically calculated and entered as mg / kg or mcg/g with an error limit of RSD in % [4, 10].

Results and discussion

The native land of the medicinal plant is considered to be the tropical regions of India and South-East Asia [6]. MOMORDICA differs from other pumpkin crops by its larger light green, beautifully cut leaves, as well as its thin and long stems, which can reach up to a height of two meters or more. Flowering of the plant coincides with the beginning of active formation of shoots. The flowers are separate-sexed, bright yellow, with a delicate aroma of Jasmine, on long legs; the female flowers are slightly smaller. First, male flowers appear on the plant, then female ones. After pollination, the ovaries immediately begin to develop rapidly. The warty fruits are covered with nipple-like protrusions on the outside, like the skin of a crocodile. They have an elongated oval shape with a pointed tip 10-20 cm long and up to 7 cm in diameter. Gradually they become orange-yellow in color [1].

MOMORDICA seeds are red-brown in color, the size of watermelon seeds, and have a thin but strong rind. When ripe, the fruit cracks in its lower part and twists into three fleshy petals. Inside the fruit is a juicy per carp of dark ruby color. It tastes very pleasant, resembles a ripe persimmon, and the fruit itself tastes like a pumpkin. The surface of the fruit is slightly bitter, so MOMORDICA is often called «bitter pumpkin» [6].

A climbing vine with thick green leaves and sun-colored fruits grows quite quickly. Therefore, by planting it near a fence or grid, you can get a great hedge. Indian Ayurveda along with traditional Chinese medicine has long endowed the plant with miraculous properties. And all this is due to the unique chemical composition of momordica – any part of it, without exception, contains useful substances for the body. The leaves are rich in large amounts of potassium, iron, sodium, and phosphorus. Fruits and shoots are a source of beta-carotene, folic acid, zinc, silicon, and potassium [5]. In addition, the plant contains substances that block the growth of cancer cells and have antiviral and antibacterial properties. Red seeds, unlike the pulp, have a sweet taste, contain lycopene and bitter glycoside. They are often used for the prevention and treatment of rheumatoid arthritis and cardiovascular diseases. Triterpene saponins were found in the roots of the plant, which have a beneficial effect on the body in the treatment of rheumatism. The reddish shell around the seeds is a powerful source of fatty oils and vitamin A, which causes the beneficial properties of the plant for people with impaired vision and reduced immunity. Eastern medicine widely uses MOMORDICA for the treatment of infectious diseases of the gastrointestinal tract. Momordic grains are used in raw form to treat peptic ulcer disease, stabilize blood sugar levels and reduce cholesterol [3].

Tocopherol contained in the plant protects the human body from premature aging, vitamin F gives vigor and strength, folic acid nourishes the bone marrow, protects against tumors. MOMORDICA destroys bacteria and viruses, treats hypertension, hemorrhoids, stomach ulcers, diabetes, and even leukemia, improves the immune system, and analgesics [2]. Quickly removes excess fat, accelerates the metabolism, reduces the level of cholesterol in the blood. Unique plants that work as well as medicines. For many centuries in the East, the bitter cucumber MOMORDICA with large pimples was used to prolong youth, enhance sexual desire and activity, treat the heart, stomach, and burns.

Bitter cucumber in South-East Asia and China is used for decorative plantings, in folk medicine and cooking [4]. On lianas with large carved leaves, yellow flowers appear, from which fruits that resemble a melon or cucumber grow. After ripening, the fruit turns yellow and bursts, exposing red seeds. For this similarity, they are called pomegranates. In cooking, unripe fruits and sweet seeds are used. Useful properties, the composition of MOMORDICA, contraindications, and came to the conclusion that all parts of the plant is a storehouse of minerals, complex organic compounds, vitamins. The healing properties of Indian cucumber are considered to be the components contained in the plant that are useful for the entire body. The leaf extract stimulates the production of interferon. Increased resistance to serious viral diseases: herpes, HIV, infectious mononucleosis.

Prepared dosage forms like decoction, infusion, and tinctures of fruits, leaves, and juice help cope with *Helicobacter pylori* better than antibiotics. Extraction from all parts of MOMORDICA delays the development of malignant tumors [2]. Fruits and seeds reduce cholesterol levels. In the treatment of joint diseases, the Chinese bitter healing pumpkin MOMORDICA is used as an anti-inflammatory and analgesic. Tea and infusion of vegetable raw materials and seeds are used at high temperatures, runny nose, and cough. In addition, the healing properties of Indian cucumber are used in the treatment of a number of diseases: inflammation of the genitourinary system; skin rashes, eczema, psoriasis; burns, wounds; pancreatitis; liver diseases and diabetes. American scientists have determined that the plant contains substances that can replace sugar-lowering drugs and believe that bitter melon MOMORDICA can be used to normalize sugar levels in diabetes [3].

Like any medicinal plant, Indian cucumber has benefits and harms. It is contraindicated to use tea and fruit for pregnant women. They increase the tone of the uterus; can provoke fetal death and miscarriage. Plant extracts contain many components that can penetrate breast milk and cause harm to the child. Melon-based medicines are contraindicated in diseases of the adrenal glands, glucose-6-phosphate dehydrogenate deficiency, chronic diseases of the gastrointestinal tract, and individual intolerance.

Chemical composition the valuable MOMORDICA fruit contains dozens of components that provide the healing properties of tea and dietary supplements. B vitamins are involved in all processes of the body's life. Ascorbic acid is necessary for updating the blood, strengthening blood vessels, and fighting viruses. Tocopherols increase libido, promote overall health, and help maintain youth. Carotene strengthens bones, the immune system, and vision. Nicotinic acid reduces sugar

levels, removes toxins, and improves the functioning of the heart and blood vessels. Lycopene has an antioxidant property that helps fight cancer cells and breaks down fats. Folic acid normalizes the emotional background, participates in the formation of new cells, hematopoietic. Vitamin F eliminates skin problems like acne, eczema. The fruits and shoots contain: glycosides, phytoncides, potassium, iron, phosphorus, and calcium. Pomegranate for improving metabolism is rich in components of plant raw materials, helps to reduce glucose levels, stimulate

the breakdown of fat and metabolic processes, remove toxins, suppress hunger. Two tea bags a day stimulate insulin secretion and glucose utilization. Bitter melon provides a glucose-lowering properties of tea due to the high content of carnation. The healing drink momordica will relieve headaches, make up for the lack of vitamins, stabilize blood pressure, improve bowel function, and clear blood vessels. The results of the analysis by inductively coupled plasma mass spectrometry (ISP-MS) are shown in table 1[3].

Table 1

№	Elements	Number of sod. in mg / g	№	Elements	Number of sod. in mg / g
		benefit			benefit
1	Potassium, K	8965,854	9	Honey, Cu	6,190
2	Calcium, Ca	3677,771	10	Nickel, Ni	0,923
3	Magnesium, Mg	3079,176	11	Iron, Fe	154,120
4	Sodium, Na	2310,421	12	Gallium, Ga	0,207
5	Phosphorus, P	979669,845	13	Chrome, Cr	2,181
6	Aluminium, Al	175,455	14	Lithium, Li	1989
7	Cobalt, Co	0,081	15	Barium, Ba	4,969
8	Manganese, Mn	6,749	16	Arsenic, As	0,018

Conclusion

1. The results of the study, studied as a raw material of cultivating medicinal plants and plant raw materials *Momordica charantia* L has bactericidal, antioxidant, hypotensive, antiviral, hypoglycemic activity, rich in vitamins and a number of useful properties.

2. Quantitative determination of micro-and macroelements by inductively coupled plasma mass spectrometry (ISP-MS) in Indian pomegranate fruit was studied. The methods revealed the highest quantitative content of micro-and macronutrients in the fruits of the Indian pomegranate [4].

3. Prospects for further research are related to the study of the chemical composition and active ingredients of the medicinal plant, the pharmacological properties of active substances, taking into account modern characteristics and achievements of modern science.

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