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Zingiber Officinale Roscoe

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Annotation
Ginger is rich in active components such as phenolic and terpene compounds. The phenolic compounds in ginger are mainly gingerols, shogaols and paradols. The Latin name of the genus Zingiber is derived from the ancient Tamil word "ingiver", which denoted the rhizome of ginger. Thanks to Arab trading ships, the ginger rhizome and the term itself spread to Ancient Greece and Rome, and then throughout Europe. It is from this that the modern name "ginger" comes from in most Western languages. The pronounced antiemetic effect of ginger has been proven. In addition, it has an anti-inflammatory and analgesic effect, comparable to non-steroidal anti-inflammatory drugs in the absence of an ulcerogenic effect and providing a hepatoprotective effect.

Keywords: Zīngiber officināle, botanical characteristics, chemical composition, 6-Gingerol, Zingeberin.

Introduction. Zīngiber officināle (medicinal ginger) is a perennial herbaceous plant 0.5-1 m high (Fig. 1.). The rhizomes are creeping; knotty, cylindrical, pale yellow in color, there may be a reddish tint. The leafy stem is bare except for short hairs at the base of the leaves. The leaf blade is linear-lanceolate in shape, uniformly tapering to a thin tip, about 17 cm long, dark green in color, and has a leaf sheath. The arrangement of the leaves is alternate, with their sheaths layered on top of each other. The flowering stem is thinner than the leafy ones, usually about 12 cm in height, covered with covering leaves. At the top there is a cone-shaped inflorescence of bracts, in the axils of which flowers sit. The bracts are green, with a pale yellow stripe along the edge, and may have a white tip on top. The calyx is tubular (3 fused sepals). The corolla consists of three incompletely separated yellowish petals, oval in shape, tapering towards the top, while the posterior sepal is wider than the lateral ones and bends over the stamen.

The flower lip is almost round, approximately 12 mm in diameter, wide, pale purple or reddish purple, with spots and a cream or yellow base. The lateral lobes are not completely separated from the

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middle lobe. The fertile stamen is one, cream-colored, the appendage at the top of the stamen is dark purple, curved. The pistil consists of three fused carpels, the ovary is inferior. The species is believed to be sterile and does not produce seeds under normal cultivation conditions. It reproduces by growing rhizomes [1].

The Latin name of the genus Zingiber is derived from the ancient Tamil word “ingiver”, which denoted the rhizome of ginger. Thanks to Arab trading ships, the ginger rhizome and the term itself spread to Ancient Greece and Rome, and then throughout Europe. It is from this that the modern name “ginger” comes from in most Western languages.

In ancient India, ginger was used not only as a spice, but also as a medicine, which is why it occupied an important place in the ancient texts of Ayurveda.

In the Canon of Medicine (near 1023), the Persian scientist Avicenna describes ginger as a remedy for improving digestion, strengthening memory, removing phlegm, increasing potency and male semen.

In the middle Ages, ginger was brought to Europe, where it was used as a spice and medicine. In addition, ginger was considered one of the main remedies for the prevention of plague. Merchants believed that ginger grew at the end of the world in the 13th country of troglodytes, who vigilantly guarded it [3], due to which they further increased the already considerable price for the miraculous root. Its value per pound was approximately equal to the price of a ram.

Ginger reached Rus'. This can be confirmed by an excerpt from the work “Our Garden Flowers, Vegetables and Fruits. Their history, role in the life and beliefs of different peoples and homeland” 1911 N.F. Zolotnitsky: “...the famous Little Russian borscht was prepared back in the 16th century, and sliced beets with ginger seasoning were served at boyar feasts as an appetizer for the appetite.” In the dictionary V.I. Dahl has a definition of ginger, or ginger, and ginger tincture - ginger, or imbirovka. [4]

Ginger is one of the most widely cultivated spices. Due to the ease of transporting ginger rhizomes over long distances, it has long spread throughout the world. Main cultivation centers: India, China, Jamaica, Taiwan, Sierra Leone, Nigeria, Fiji, Mauritius, Indonesia, Brazil, Costa Rica, Ghana, Japan, Malaysia, Bangladesh, Philippines, Sri Lanka, Solomon Islands, Thailand, Trinidad and Tobago, Uganda, Hawaii, Guatemala and other Pacific Islands. [1,5,6,7,8,9,10].

Raw ginger rhizomes are collected in autumn or early winter at the end of the growing season. The rhizomes are cleared of soil; the roots are removed, and washed well. According to the Pharmacopoeia of the People's Republic of China, the raw materials are cut into thin pieces - “Slices of ginger rhizomes.” To do this, fresh rhizomes are cleaned of soil and roots, soaked briefly, washed

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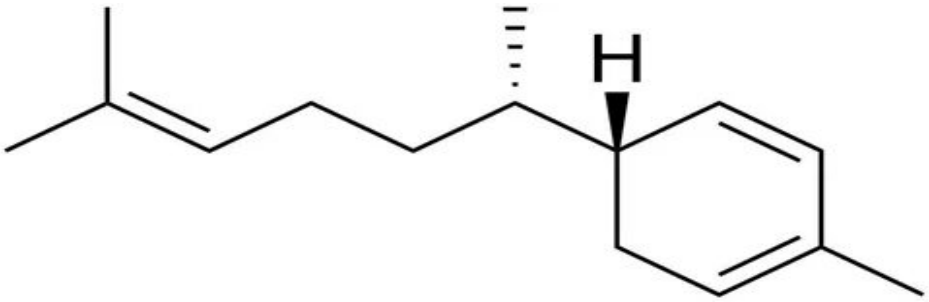
and cut into slices and dried in the sun or shade. The resulting slices should be no more than 4 mm thick [11, 12, 13]. When harvesting in Japan, the skin is peeled off the fresh rhizomes, then they are sprayed with lime water and dried only in the shade. The raw materials may contain white powder [14, 15, 16, 17, 18]. 14 According to the Pharmacopoeia of the People's Republic of China, the rhizomes are not peeled and dried in the sun or in the shade. [1,19,20,21,22] In the Pharmacopoeias of the USA, Europe, Great Britain, and India, peeled, partially peeled, and unpeeled rhizomes are allowed. [23, 24, 25, 26, 27].

The main components of the chemical composition of ginger rhizome, which ensure its pharmacological activity, are considered to be essential oil and phenolic compounds - gingerols and shogaols. Essential oil makes up 1-4%. More than 100 components have been identified in ginger, the main of which are sesquiterpenes (50% of the total) - α- and β-zingiberenes (Fig. 2), curcumenes, β-sesquifelandrene, β-bisabolene, α- and β-farnesenes, zingiberol and others . Monoterpenes are present in smaller quantities, giving the rhizome a characteristic odor - geraniol (9%), linalool (1%), borneol, geranial, geraniacetate, isoborneol. Essential oil also contains aldehydes, alcohols, ketones and alkanes. The composition and amount of essential oil in ginger is significantly influenced by its place of cultivation or growth. [28,29,30,31] Phenolic non-volatile substances that give the rhizome a pungent taste are gingerols. The main one is 6-gingerol (Fig. 2); 8-gingerol and 10-gingerol are present in smaller quantities. The numbers in the names of gingerols indicate the products of their alkaline hydrolysis, for example, the product of hydrolysis of 6-gingerol - hexanal, a six-carbon aldehyde. During drying and storage, gingerols are partially dehydrated into the corresponding shogaols (Fig. 2), which can then be further converted to paradols, gingerdiones, gingerdiols and gingerdiol acetates. [32,33,34].

	Zingiberene

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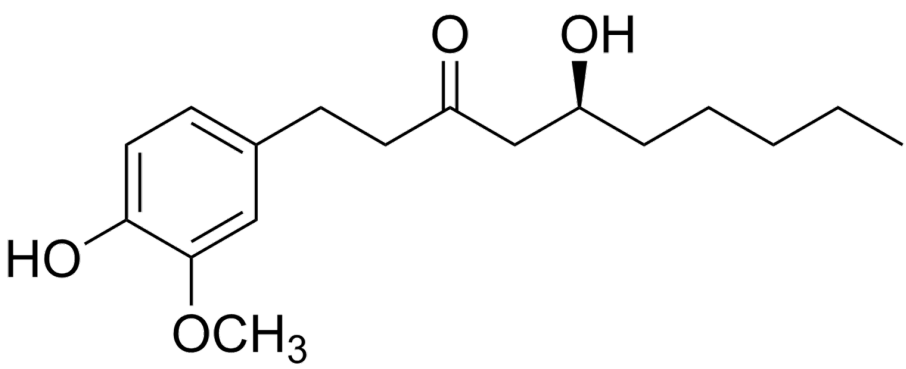
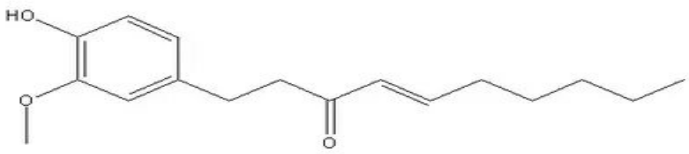
	6-gingerol
	6-shagaol

Fig. 2 Structural formulas of zingiberene, 6-gingerol, 6-shogaol [35].

Conclusion. An analysis of scientific publications has shown that ginger has a wide range of pharmacological effects due to the content of various groups of biologically active substances. The main active ingredients of ginger are gingerols, shogaols and essential oil, which contains sesquiterpenes (zingiberenes, curcumenes). The pronounced antiemetic effect of ginger has been proven. In addition, it has an anti-inflammatory and analgesic effect, comparable to non-steroidal anti-inflammatory drugs in the absence of an ulcerogenic effect and providing a hepatoprotective effect.

REFERENCES

1. Ravidran N., Nirmal Babu K. Ginger: the genus Zingiber. – CRC Press, 2005. – 553 p
2. https://yandex.ru/images/search?from=tabbar&img_url=https%3A%2F%2Fimbirchik.ru%2Fassets%2Fimages%2Fginger-rost-3-big.jpg&lr=10330&p=3&pos=4&rpt=simage&text=%D0%B8%D0%BC%D0%B1%D0%B8%D1%80%D1%8C%20%D0%BB%D0%B5%D0%BA%D0%B0%D1%80%D1%81%D1%82%D0%B2%D0%B5%D0%BD%D0%BD%D1%8B%D0%B9
3. Михайлов Г. Сильнее, чем женьшень. Целительные свойства имбиря. М. Астрель, 2013. 160 с.
4. Toussaint-Samat M. A History of Food. — 2nd ed. — John Wiley & Sons, 2009. — P. 447

Volume: 2 Issue: 11 | Nov – 2023 **ISSN: 2720-6866**
http://journals.academiczone.net/index.php/rjtds

5. Хайдаров, Д. (2023). ФИТОХИМИЧЕСКИЙ СОСТАВ ZINGIBER OFFICINALE ROSCOE. Центральноазиатский журнал образования и инноваций, 1 (6 Часть 5), 36-42.
6. Хайдаров, Д. (2023). ТУРЛИ КАСАЛЛИКЛАР ДАВОЛШДА «ЗИНГИБЕР ОФИЦИНАЛЕ РОСКО Л» ДЭН ФОЙДАЛАНИШ. Центральноазиатский журнал образования и инноваций , 2 (5 Часть 3), 220-226.
7. Bahodirovich, H. D. (2023). Use of "Zingiber Officinale Roscoe L" Root in Various Diseases. Central Asian Journal of Medical and Natural Science, 4(3), 415-422.
8. Хайдаров, Д. Б. (2023). Использования Корневища "Zingiber Officinale Roscoe". Central Asian Journal of Medical and Natural Science, 4(3), 484-490.
9. Bakhodirovich, H. D. (2023). MAGNESIUM AND POTASSIUM DEFICIENCY AND ITS CORRECTION WITH VEGETABLE TINCTURE TINCTURAE MORUS. AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI, 2(4), 139-145.
10. Мелибоева, SSQ, Болтаев, М.М., Шарипова, Е.М., и Шарипова, Р.Г. (2021). Сравнительная эффективность препарата «Нодинорм» в комплексном лечении фиброзно-кистозной мастопатии. АКАДЕМИЦИЯ: Международный междисциплинарный исследовательский журнал , 11 (10), 1591–1596.
11. Pharmacopoeia of the People's Republic of China 2005. – Beijing: People's Medical Publishing House. 2005. 974 p.
12. Мелибоева, Ш. Ш. К. Мусаева, Д. М. Шарипова, Э. М. & Болтаев, М. М. (2020). Ботаническая характеристика лекарственного растения «broccoli», фармакологические свойства и химический состав лекарственного растительного сырья «brassica oleracea». Вестник науки и образования, (24-1 (102)), 98-102.
13. Sh, M. S. (2022). Comparative analysis of common fennel regenerants according to the main morpho-biological features based on I. European Journal of Life Security and Stability (2660-9630), 15, 299-303.
14. The Japanese Pharmacopoeia. 16th edition. 2011. 2319 p.
15. Болтаев, М. М., & Мелибоева, Ш. Ш. к., Джалилов, ФС, Юлдашева, ДХ, Джалилова, ФС, & Самадов, БШ (2022). ПРИМЕНЕНИЕ БРОККОЛИ И ПРОРОСТКОВ БРОККОЛИ В ПРОФИЛАКТИКЕ И ЛЕЧЕНИИ РАЗЛИЧНЫХ ЗАБОЛЕВАНИЙ. Журнал химии товаров и народной медицины, 1(4), 242-254.

Volume: 2 Issue: 11 | Nov – 2023 **ISSN: 2720-6866**
http://journals.academiczone.net/index.php/rjtds

16. Джалилов, Ф. С. Болтаев, М. М. & кизи Мелибоева, Ш. Ш. (2022). BROCCOLINING SHIFOBAXSH XUSUSIYATLARI. Журнал химии товаров и народной медицины, 1(3), 194-205.
17. Meliboeva, S., Boltayev, M., & Jalilov, F. (2022). The effect of broccoli sprouts on diabetes mellitus and the gastrointestinal tract. Science and innovation, 1(D5), 81-87.
18. Болтаев, М. М. Шарипова, Э. М., & Мелибоева, Ш. Ш. (2022). ПЕРВЫЕ ЛЕЧЕБНО-БОТАНИЧЕСКИЕ САДЫ НА ТЕРРИТОРИИ СОВРЕМЕННОГО УЗБЕКИСТАНА. IJTIMOIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI, 96-100.
19. Boltaev, M. M., Sh, M. S., & Jalilov, F. S. (2023). PREPARATION AND DRYING OF BROCCOLI HERBS (BRASSICA OLERACEA L.). Електронне видання мережне Редакційна колегія: проф. Котвіцька АА, проф. Владимирова ІМ, проф. Георгіянц ВА, проф. Перехода ЛО, проф. Журавель ІО, проф. Колісник СВ, доц. Криськів ОС, проф. Власов СВ, ас. Смєлова НМ, ас. Григорів ГВ, 19.
20. Meliboeva, S. (2022). THE FIRST HEALING AND BOTANICAL GARDENS ON THE TERRITORY OF MODERN UZBEKISTAN. Science and innovation, 1(D4), 101-105.
21. Болтаев, М. М., Мелибоева, Ш. Ш. к., Джалилов, Ф. С., & Самадов, Б. Ш. (2023). ТЕХНОЛОГИЯ СУШКИ БРОККОЛИ (BRASSICA OLERACEA L.). *Журнал химии товаров и народной медицины*, *2*(2), 182–196. https://doi.org/10.55475/jcgtm/vol2.iss2.2023.184
22. Meliboeva, S. (2023). ABU ALI IBN SINONING TIB QONUNLARIDA QAYD ETILGAN PLANTAGO MAJOR L. NING TIBBIY AHAMIYATI. *Центральноазиатский журнал образования и инноваций*, *2*(6 Part 4), 37-41.
23. The United States Pharmacopeia–National Formulary. USP 32/ NF 27. Rockville, MD: The United States Pharmacopoeial Convention. 2009
24. Мелибоева, Ш. (2023). МЕДИЦИНСКОЕ ЗНАЧЕНИЕ PLANTAGO MAJOR L. ИЗ КАНОНА АВИЦЕНЫ. *Центральноазиатский журнал образования и инноваций*, *2*(6 Part 4), 53-58.
25. Indian Pharmacopoeia 2007. – Chaziabad: The Indian Pharmacopoeia Comission. 2007. 2328 p.
26. Sh, M. S., Boltaev, M. M., & Jalilov, F. S. (2023). CONTENT ANALYSIS OF ANTI-CANCER DRUGS FOR 2022. *Електронне видання мережне Редакційна колегія: проф. Котвіцька АА,*

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http://journals.academiczone.net/index.php/rjtds

проф. Владимирова ІМ, проф. Георгіянц ВА, проф. Перехода ЛО, проф. Журавель ІО, проф. Колісник СВ, доц. Криськів ОС, проф. Власов СВ, ас. Смєлова НМ, ас. Григорів ГВ, 52.

27. Мелибоева, Ш. Ш. Болтаев, М. М. Жалилов, Ф. С. & Кодирова, Ш. С. (2022). ЗНАЧЕНИЕ БРОККОЛИ В НАРОДНОЙ МЕДИЦИНЕ. Издается по решению редакционно-издательского совета ФГБОУ ВО КГМУ Минздрава России, 144.
28. Deni Brown, Kate Ferry-Swainson. Ginger. London: Carlton Books, Limited, 1999. 80 p
29. Mavlonovich, B. M. (2022). Pharmacological Properties of Stinky Ferula Gum and its Anti-Inflammatory Effects. *American Journal of Social and Humanitarian Research*, *3*(2), 372-376.
30. Evaluation of Zingiber officinale and Curcuma longa rhizome as a crude drug from their ethanolic extract / Sharma Pradeep Kumar, et al. // P.G. Department of Applied Chemistry, Samrat Ashok Technological Institute, Vidisha (M.P.), India, 2013. № 4 (12). P. 74-76.
31. Mavlonovich, B. M. (2022). ANTI-CANCER PROPERTIES OF CRUCIFEROUS VEGETABLES. *Asian journal of pharmaceutical and biological research*, *11*(2).
32. 6-Shogaol, an active constituent of ginger, inhibits breast cancer cell invasion by reducing matrix metalloproteinase-9 expression via blockade of nuclear factor-kB 135 activation / H. Ling, H. Yang, S.-H. Tan, W.-K. Chui and E.-H. Chew // British Journal of Pharmacology. 2010. №161. P. 1763-1777.
33. Болтаев, М. М. (2023). ЗНАЧЕНИЕ КУРКУМЫ В НАРОДНОЙ И ТРАДИЦИОННОЙ МЕДИЦИНЕ. *European Journal of Interdisciplinary Research and Development*, *16*, 367-372.
34. Boltaev, M. (2023). CURCUMA LONGANI XALQ VA AN'ANAVIY TABIBIDA AHAMIYATI. *Центральноазиатский журнал образования и инноваций*, *2*(6 Part 4), 42-46.
35. https://ru.wikipedia.org/wiki/%D0%97%D0%B8%D0%BD%D0%B3%D0%B8%D0%B1%D0%B5%D1%80%D0%B5%D0%BD