Egyptian Herbal Monograph

Volume 2

Medicinal plants used in Egypt

Egyptian Drug Authority (EDA)

2025

Egyptian Herbal Monograph

Medicinal Plants Used in Egypt

***Allium sativum* L.** ثوم

1. Names & Synonyms (1)

***Allium sativum* L.**

Syns.: *Allium sativum* var. *vulgare* Döll, *Porrum sativum* (L.) Rchb.

Family: Amaryllidaceae.

Arabic name: Thoum ثوم

English name: Garlic (2)

2. Parts used for medicinal purpose

Fresh and dried bulb (2-4)

3. Major chemical constituents

- **Organosulfur compounds:** Allicin (diallyl thiosulfonate), diallyl-sulfide, disulfide and trisulfide, E/Z – ajoene, S-allyl-cysteine, alliin (S-allyl-cysteine sulfoxide) (5) and vinyldithiines (6).
- **Phenolic compounds:** Phenolic acids (*β*-resorcyclic, gallic, caffeic, protocatechuic, ferulic and vanillic acids), flavonoids (rutin, quercetin and myricetin) and pyrogallol (7).
- **Others:** Steroidal saponins (5,8,9), polysaccharides.

4. Medicinal Uses (Indications)

A. Treatment of elevated blood lipid levels (hyperlipidaemia) (10) and reduction of cardiovascular risk (11).

B. Adjuvant for prevention of atherosclerosis (2).

C. Supportive treatment of hypertension (12).

D. Symptomatic relief of common cold (2), upper respiratory tract infections and catarrhal conditions (such as nasal congestion/buildup of excess mucous) (3,10).

5. Herbal preparations correlated to medicinal use

1) Powdered drug (2).
2) Liquid extract from fresh bulb, extraction solvent: refined rapeseed oil (2).
3) Dry extracts:
   - 3.1. Extraction solvent: Ethanol 34% (2).
   - 3.2. From aged garlic (minced garlic that is incubated in ethanol (15–20%) for 20 months, then concentrated) (4).
4) Tincture (1: 5) in 45% ethanol (3, 12, 13).
5) Essential oil (3, 10, 14).

Herbal preparations are in pharmaceutical dosage forms. The pharmaceutical form should be described by the pharmacopoeia full standard term.

6. Posology and method of administration correlated to medicinal use

Preparation 1

Indications A - C

Adults and elderly

400 – 1200 mg, daily, equivalent to alliin 6 – 10 mg (approximately 3–5 mg allicin) (3, 12, 14-16).

Indication B

Adults and elderly

Single dose: 300 - 750 mg, 3 - 5 times daily. Daily dose: 900 - 1380 mg (2).

Preparation 2

Indication B

Adults and elderly

- Single dose: 110 - 220 mg, 4 times daily. Daily dose: 440 - 880 mg (2).
- 0.5 – 2 ml, 3 times daily (14).

Preparation 3

Preparation 3.1

Indications A - C

Adults and elderly

300 – 1000 mg, daily (4).

Indications D

Adolescents, adults and elderly

Single dose: 100 - 200 mg, 1-2 times daily. Daily dose: 100 - 400 mg (2, 12).

Preparation 3.2

Indication C

480 – 960 mg (standardised to 4.8 mg S-allylcysteine) daily, in divided doses (14).

Preparation 4

Indications A - D

Adults and elderly

2 – 4 ml, 3 times daily (3,12).

Preparation 5

Indications A - D

Adults and elderly

- 2 - 5 mg, daily (4, 10, 14).
- 0.03 – 0.12 ml, 3 times daily (3).

Duration of use

Indications A & B: 4 – 24 weeks (3).

Indications C: At least 12 weeks to see maximal results (14).

Indication D: If the symptoms persist longer than one week during the use of the medicinal product, a doctor or a pharmacist should be consulted (2).

Method of administration: Oral use (2).

7. Contraindications

- Hypersensitivity to the active substance and to other plants of the same family.
- Concomitant use with saquinavir/ritonavir is contraindicated because of the risks of decrease in plasma concentration, loss of virological response and possible resistance to one or more components of the antiretroviral regime (2).
- Because garlic may reduce iodine uptake, it should not be used by persons with hypothyroidism (15).
- Stomach inflammation or gastritis (15).

8. Special warnings and precautions for use (2)

- If the symptoms worsen during the use of the medicinal product, a doctor or a pharmacist should be consulted.

Garlic consumption should be avoided 7 days before surgery because of the post-operative bleeding risk (15).

- **Indications A – C:** The use in children and adolescents under 18 years of age is not recommended.
- **Indication D:** The use in children under 12 years of age is not recommended.

9. Interactions with other medicinal products and other forms of interaction (2)

- Garlic preparations should be used with caution in patients taking oral anticoagulation therapy and/or anti-platelet therapy because they may increase bleeding times.

10. Fertility, pregnancy and lactation

- Safety during pregnancy and lactation has not been established. In the absence of sufficient data, the use during pregnancy and lactation is not recommended.
- No fertility data available.

11. Effects on ability to drive and use machines (2)

- No studies on the effect on the ability to drive and use machines have been performed.

12. Undesirable effects (2)

- If adverse reactions occur, a doctor or a pharmacist should be consulted.
- Malodorous breath or body odour, abdominal pain, bloating, flatulence, fullness and anorexia.
- Allergic reactions such as contact dermatitis, conjunctivitis, rhinitis, or bronchospasms, sometimes are severe.
- Headache, dizziness and profuse sweating.
- Bleeding

13. Overdose (2)

- No case of overdose has been reported.

14. Relevant biological activities

- Not required as per Egyptian guidelines for registration of herbal medicines.

15. Additional Information

-

16. Date of compilation/last revision

11/12/2023.

References

1.	https://powo.science.kew.org
2.	European Union herbal monograph on *Allium sativum* L.,bulbus. (2017). EMA/HMPC/674139/2013. Committee on Herbal Medicinal Products (HMPC).
3.	Barnes, J., Anderson, L. A. and Phillipson, J. D. (2007). Herbal Medicines, 3rd edition. Published by the Pharmaceutical Press. ISBN 978 0 85369 623 0.
4.	WHO monographs on selected medicinal plants (1999). Monographs on selected medicinal plants, **1**, 16-32.
5.	, A., Cao, S. Y., Xu, X. Y., Gan, R. Y., Tang, G. Y., Corke, H., Mavumengwana, V. and Li, H. B. (2019). Bioactive cCompounds and biological functions of garlic (*Allium sativum* L.). *Foods*, **8**(7), 246. doi: 10.3390/foods8070246.
6.	, E. G., Beshbishy A, M., Wasef, G. L., Elewa, Y. H. A., Al-Sagan, A. A., Abd El-Hack, M. E., Taha, A. E., Abd-Elhakim, M. Y. and Devkota, P. H. (2020). Chemical constituents and pharmacological activities of Garlic (*Allium sativum* L.): A review. *Nutrients*, **12**(3), 872. doi: 10.3390/nu12030872.
7.	a, P., Thiruvengadam, M., Ahmad, A., Yoon, J. Y. and Chung, I. M. (2014). Composition of polyphenols and antioxidant activity of garlic bulbs collected from different locations of Korea. *Asian J. Chem*., **26**(3), 897-902.
8.	tti, V., Barile, E., Antignani, V., Bonanomi, G. and Scala, F. (2012). Antifungal saponins from bulbs of garlic, *Allium sativum* L. var. *Voghiera*. *Phytochemistry*, **78**, 126-34. doi: 10.1016/j.phytochem.2012.03.009.
9.	ura, H. (2001). Saponins in garlic as modifiers of the risk of cardiovascular disease. *J. Nutr.*, 131(3s), 1000S-5S. doi: 10.1093/jn/131.3.1000S.PMID: 11238805.
10.	Natural Health Product, Garlic - *Allium sativum* (2023). Health canada https://webprod.hc-sc.gc.ca/nhpid-bdipsn/atReq.do?atid=garlic_ail&lang=eng
11.	https://www.aafp.org/pubs/afp/issues/2005/0701/p103.pdf
12.	ESCOP Monographs (2019). ALLII SATIVI BULBUS Garlic. European Scientific Cooperative on Phytotherapy. Edited by Roberta Hutchins and Simon Mills.
13.	Duke, J. A. (2002). Handbook of Medicinal Herbs. 2nd ed. CRC Press. ISBN 978084931284.
14.	Braun, L. and Cohen, M. (2010). Herbs and Natural Supplements - An evidence-based guide. 3rd edition, Churchill Livingstone. ISBN: 978 0 7295 3910 4.
15.	Mosby's Handbook of Herbs and Natural Supplements (2010). 4th ed., ISBN: 978-0-323-05741-7.
16.	PDR for herbal medicines (2002). Montvale, NJ: Medical Economics Company, 2nd ed., ISBN 1-56363-361-2.