

Egyptian Herbal Monograph

Volume 2

Medicinal Plants used in Egypt

Egyptian Drug Authority (EDA)

2025



Egyptian Herbal Monograph

Medicinal Plants Used in Egypt

Pinus pinaster Aiton

صنوبر بحري

1. Names & Synonyms (1)

Pinus pinaster Aiton

Family: Pinaceae.

Syns.: *Pinus maritima* L., *Pinus glomerata* Salisb., *Pinus pinaster* subsp. *atlantica* Villar.

Arabic: Senouber Bahri صنوبر بحري (2).

English name: French maritime pine (3), Maritime pine, Cluster pine (4,5).

2. Parts used for medicinal purpose

Bark (3,5,6) fresh needles and branch tips (7).

3. Major chemical constituents

- Bark:

Flavonoids: Taxifolin (dihydroquercetin), catechin, and procyanidins (oligomers of catechin/and or epicatechin) (8,9).

Acids: Quinic and phenolic acids (caffeic, ferulic, protocatechuic, gallic, and ellagic acids) (10).

Essential oil: α -Terpineol, β -caryophyllene, β -pinene, cyclofenchene, valencene, α -humulene, α -pinene, 3-carene, and junipene (8,11).

Others: Abietic acid and derivatives (12), resveratrol, cellulose, hemicellulose and lignin (13).

- Needles and branch tips:

Essential oil: β -Caryophyllene (14), abietane, Δ -cadinene, β -cadinene sclarene, α -amorphene (15), and (Z,E)-farnesyl propionate (16).

Others: monoterpenes, neutral diterpenes, fatty acids and resin acids (16).

4. Medicinal Uses (Indications) (3, 5-7)

- A-** Improvement of chronic venous insufficiency.
- B-** Reduction of cardiovascular risks such as hypertension, thrombosis and impaired blood circulation.
- C-** Improvement of the endothelial function in coronary artery disease.
- D-** Enhancement of retinal blood circulation in vascular retinopathy in early stages of diabetic retinopathy and in slowing its progression.
- E-** Relief menopausal symptoms.
- F-** Symptomatic relief of asthma.
- G-** Alleviate symptoms of Attention Deficit–Hyperactivity Disorder (ADHD) (17).
- H-** Symptomatic relief of osteoarthritis.
- I-** Symptomatic treatment of the respiratory tract infections and inflammations (coughs, acute bronchitis, laryngitis, pharyngitis, tracheitis rhinopharyngitis, tonsillitis), as well as those of the mouth.
- J-** Symptomatic relief of rheumatism, acute rheumatic fever and arthropathies.
- K-** Symptomatic relief of neuralgia and neuritis.

5. Herbal preparations correlated to medicinal use

1. Pine bark extract (3,6,13).
2. Essential oil from needles and branch tips (7).

Herbal preparations are in a 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

Adults

Indication A

45-360 mg daily or 100 mg, 3 times daily (3, 6).

Duration of use: 4 weeks (3).

Method of administration: Oral use.

Indication B

25 mg daily (preventative dose) (3).

100 – 150 mg daily (3).



Duration of use: As directed by a physician.

Method of administration: Oral use.

Indication C

150 mg, 3 times daily (6).

Duration of use: As directed by a physician.

Method of administration: Oral use.

Indication D

50 mg, 3 times daily (6,17).

Duration of use: As directed by a physician.

Method of administration: Oral use.

Indication E

30 – 60 mg daily (3,6).

Duration of use: As directed by a physician.

Method of administration: Oral use.

Indications F, G, H

100 mg daily (3).

Duration of use: As directed by a physician.

Method of administration: Oral use.

Indications J, K

Bath additive: 100 g ethanolic extract to a full tub of bath water (7).

Duration of use: As directed by a physician.

Method of administration: Topical use.

Preparation 2 (7)

Adults

Indication I

2 g (9 to 10 drops) of pine oil to 2 cups of hot water and inhale the vapours. Repeat several times a day.

Duration of use: As directed by a physician.

Method of administration: Inhalation use.

Indications J, K

Bath additive: One drop of the oil per litre of water bath for 10 to 20 minutes at a water temperature of 35–38°C.

Oil: Apply a few drops of the oil to the affected areas of the skin and rub in thoroughly.

Ointment: Apply a 10–50 % ointment several times a day, rub onto the affected area.

Cream: Apply up to 4 times daily.

Duration of use: As directed by a physician.

Method of administration: Topical use.

7. Contraindications

- Hypersensitivity to active substances and to other plants of the same family.
- The use of oil or ethanolic extract as a bath additive is contraindicated in bronchial asthma, whooping cough. Individuals with extensive wounds, acute skin diseases (acute dermatitis), febrile and infectious diseases, heart failure and/or hypertension (cardiac insufficiency) (7).

8. Special warnings and precautions for use

- If the symptoms worsen during the use of the medicinal product, a doctor or a pharmacist should be consulted.
- The use in children should be under medical supervision (7).

9. Interactions with other medicinal products and other forms of interaction

Lab test: Pine bark extract may reduce blood platelet aggregation (7).

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

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

12. Undesirable effects

- If adverse reactions occur a doctor or a pharmacist should be consulted.
- Mild side effects such as gastrointestinal problems, nausea, headache, dizziness and skin sensitisation are rare and transient in most cases (6).
- The oil can irritate the skin and mucous membranes or worsen bronchospasms (7).

13. Overdose

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

As an antioxidant pine bark extract may be effective at any dose. However, in order to have measurable physiological effects related to prevention of oxidative tissue damage, the daily intake should be at least 20 mg (3).

16. Date of last compilation/last revision

08/06/2023.

References

1	www.powo.science.kew.org
2	https://algerianativeplants.net/html-ang/plante-algerieinventaire.php?char=P &page=2
3	Oloff, H. (2019). Scientific and Clinical Monograph of Pycnogenol (French maritime pine bark extract) <i>Pinus pinaster</i> Aiton subsp. atlantica [Fam. Pinaceae]. American Botanical Council (ABC). www.herbalgram.org .
4	https://www.conifers.org/pi/Pinus_pinaster.php
5	Edwards, S. E., Rocha, I. D. C., Williamson, E. M. and Heinrich, M. (2015). Phytopharmacy: An Evidence-Based Guide to Herbal Medicinal Products. Wiley-Blackwell, ISBN: 978-1-118-54356-6.
6	Skidmore-Roth, L. (2010). Mosby's Handbook of Herbs & Natural Supplements. 4 th ed. ISBN 9780323057417.
7	Kraft, K. and Hobbs, C. (2004). Pocket Guide to Herbal Medicine. Stuttgart; New York: Thieme. ISBN 3-13-126991-X (GTV), ISBN 1-58890-063-0 (TNY).
8	Alonso-Esteban, J. I., Caroch, M., Barros, D., Velho, M. V., Heleno, S. and Barros, L. (2022). Chemical composition and industrial applications of Maritime pine (<i>Pinus pinaster</i> Ait.) bark and other non-wood parts. <i>Rev. Environ. Sci. Biotechnol.</i> , 21 , 583- 633. https://doi.org/10.1007/s11157-022-09624-1 .
9	Iravani, S. and Zolfaghari, B. (2014). Phytochemical analysis of <i>Pinus eldarica</i> bark. <i>Res. Pharm. Sci.</i> , 9 (4), 243-250.
10	Ramos, P. A. B., Pereira, C., Gomes, A. P., Neto, R. T., Almeida, A., Santos, S. A. O., Silva, A. M. S. and Silvestre, A. J. D. (2022). Chemical characterisation, antioxidant and antibacterial activities of <i>Pinus pinaster</i> Ait. and <i>Pinus pinea</i> L. bark polar extracts: Prospecting forestry by-products as renewable sources of bioactive compounds. <i>Appl. Sci.</i> , 12 , 784. https://doi.org/10.3390/app12020784 .
11	Zolfaghari, B. and Iravani, S. (2012). Essential oil constituents of the bark of <i>Pinus pinaster</i> from Iran. <i>Journal of Essential Oil-Bearing Plants</i> , 15 (3), 348-351.
12	Sousa, J. L. C., Ramos, P. A. B., Freire, C. S. R., Silva, A. M. S. and Silvestre, A. J. D. (2018). Chemical composition of lipophilic bark extracts from <i>Pinus pinaster</i> and <i>Pinus pinea</i> cultivated in Portugal. <i>Appl. Sci.</i> , 8 , 2575. https://doi.org/10.3390/app8122575 .
13	Fradinho, D.M., Pascoal, C. N., D. Evtuguin, F. C., Jorge, M. A., Irle, M. H., Gil, J. and Pedrosa d. J. (2002). Chemical characterisation of bark and of alkaline bark extracts from maritime pine grown in Portugal. <i>Industrial Crops and Products</i> , 16 (1), 23-32. ISSN 0926-6690, https://doi.org/10.1016/S0926-6690(02)00004-3 .
14	Dob, T., Berramdane, T. and Chelghoum, C. (2005). Analysis of essential oil from the needles of <i>Pinus pinaster</i> growing in Algeria. <i>Chem. Nat. Compd.</i> , 41 , 545-548. https://doi.org/10.1007/s10600-005-0202-z .
15	Fkiri, S., Ghazghazi, H., Rigane, G., Salem, B. E. N., Mezni, F., Khaldi, A., Khouja, M. L. and Nasr, Z. (2019). Chemical compositions and biological activities essential oil from the needles of North African <i>Pinus pinaster</i> Var. <i>Rev. Roum. Chim.</i> , 64 (6), 511-517.
16	Arrabal, C., García-Vallejo, M. C., Cadahia, E., Cortijo, M. and Fernández de Simón, B. (2012). Characterization of two chemotypes of <i>Pinus pinaster</i> by their terpene and acid patterns in needles. <i>Plant Syst. Evol.</i> , 298 , 511-522. https://doi.org/10.1007/s00606-011-0562-8 .
17	http://www.rxlist.com .