



Egyptian Herbal Monograph

Volume 3

Medicinal Plants used in Egypt

Egyptian Drug Authority (EDA)

2023



Egyptian Herbal Monograph

Medicinal Plants Used in Egypt

Boswellia serrata Roxb.

لبان داکار

1. Names & Synonyms (1).

Boswellia serrata Roxb.

Family: Burseraceae

Syns.: *Boswellia glabra* Roxb., *Libanotus asiaticus* Stackh., *Libanus thurifer* Colebr.,
Chloroxylon dupada Buch.

English: Boswellia, Indian Frankincense, Indian Olibanum (2,3).

Arabic: Luban لبان (4), luban dhakar لبان داکار (5).

2. Parts used for medicinal purpose

Dried oleogum resin (5-7).

3. Major chemical constituents

The content and composition of the oleogum resin may vary depending upon age, geographical conditions and quality of resin (8-9).

- **Triterpenoic acids:** α - and β -boswellic acids (BA), acetylated α - and β -boswellic acids (ABA), 11-keto- β -boswellic acid (KBA), and 3-*O*-acetyl-11-keto- β -boswellic acid (AKBA) (8-10).
- **Essential oil:** mainly α -pinene, α -thujene, *trans*-verbenol, β -thujone, *p*-cymene, *m*-cymene and sabinene (11).
- **Carbohydrates:** disaccharides, oligo- and polysaccharides (9).

4. Medicinal uses (Indications) (5,6,12)

- A. Management of Inflammatory Bowel Disease (IBD) (ulcerative colitis and Crohn's disease).
- B. Management and treatment of rheumatism and arthritis.
- C. Management of bronchial asthma and cough.

5. Herbal preparations correlated to medicinal use

1. **Dried resin** (2,6,12).
2. **Resin extracts** (2,5,12) using suitable solvents such as isopropanol, alcohol, methanol, hexane or mixtures of these solvents. The ratio of starting plant material to extract is approximately 6:1 (7).

6. Posology and method of administration correlated to medicinal use

Adolescence and Adults

Preparation 1

1-3 g daily (5,12).

Preparation 2

300-400 mg, 3 times daily (2,5,6) up to 1500 mg daily (13)

Duration of Use:

Indication 1: 6 weeks (2).

Indication 2: 4-12 weeks (14).

Indication 3: 6 weeks (15).

Method of administration: Oral use

It should be taken with meals because food intake can significantly increase the bioavailability of boswellic acids (3).

7. Contraindications

- Hypersensitivity to the active substances and to other plants of the same family.
- Pre-existing gastritis (6).

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 of the crude drug in children under the age of 12 years is not recommended (5).

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

Boswellia may interact with conventional drugs by inhibiting P-glycoprotein and/or cytochrome P450 isoenzymes (3).



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.
- Rare side effects may include retrosternal burning, nausea, abdominal fullness, epigastric pain, anorexia, dermatitis and skin rash (6,12).

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

-

16. Date of compilation/last revision

18/05/2023.

References

1	www.powo.science.kew.org
2	Skidmore-Roth, L. Mosby's Handbook of Herbs and Natural Supplements (2010). 4 th ed., ISBN: 978-0-323-05741-7.
3	Williamson, E.M., Driver, S. and Baxter, K. (2013). Stockley's Herbal Medicines Interactions. 2 nd edition. Pharmaceutical Press, London, UK.
4	Sultana, A., Ur Rahman, K., Padmaja, A. R. and Shafeeq Ur Rahman, S. (2013). <i>Boswellia serrata</i> roxb. A traditional herb with versatile pharmacological activity: A review. <i>IJPSR</i> , 4 (6), 2106-2117.
5	WHO monographs on selected medicinal plants (2009). Monographs on Selected Medicinal Plants, 4 , 48-60.
6	Spiteri, M. (2011). Herbal Monographs including Herbal Medicinal Products and Food Supplements. Department of Pharmacy University of Malta. Set and printed by Print Right Ltd, Qormi.
7	The United States Pharmacopeial Convention (2011). <i>Boswellia serrata</i> extract, 1215-1217.
8	Sharma, N., Bhardwaj, V., Singh, S., Ali, S. A., Gupta, D. K., Paul, S., Satti, N. K., Chandra, S. and Verma, M. K. (2016). Simultaneous quantification of triterpenic acids by high performance liquid chromatography method in the extracts of gum resin of <i>Boswellia serrata</i> obtained by different extraction techniques. <i>Chem. Cent. J.</i> , 10 , 49. doi: 10.1186/s13065-016-0194-8.
9	Tošić, N. G., Nikolić, V. D., Miljković, V. M. and Nikolić, L. B. (2022). <i>Boswellia serrata</i> resin isolates: Chemical composition and pharmacological activities (Review paper). <i>Advanced Technologies</i> , 11 (1), 76-87. DOI 10.5937/savteh2201076T.
10	Roy, N. K., Parama, D., Banik, K., Bordoloi, D., Devi, A. K., Thakur, K. K., Padmavathi, G., Shakibaei, M., Fan, L., Sethi, G. and Kunnumakkara, A. B. (2019). An update on pharmacological potential of boswellic acids against chronic diseases. <i>Int. J. Mol. Sci.</i> , 20 (17), 4101. DOI: 10.3390/ijms20174101.
11	Ayub, M. A., Hanif, M. A., Blanchfield, J., Zubair, M., Abid, M. A. and Saleh, M. T. (2022). Chemical composition and antimicrobial activity of <i>Boswellia serrata</i> oleo-gum-resin essential oil extracted by superheated steam. <i>Natural Product Research</i> , 37 (14), 2451-2456. DOI: 10.1080/14786419.2022.2044327.
12	Duke, J. A. (2002). Handbook of Medicinal Herbs. 2 nd ed. CRC Press. ISBN 978084931284.
13	https://www.healthline.com/health/boswellia#side-effects .
14	Yu, G., Xiang, W., Zhang, T., Zeng, L., Yang, K. and Li, J. (2020). Effectiveness of <i>Boswellia</i> and <i>Boswellia</i> extract for osteoarthritis patients: a systematic review and meta-analysis. <i>BMC Complement. Med. Ther.</i> , 20 (1), 225. DOI: 10.1186/s12906-020-02985-6.
15	Gupta, I., Gupta, V., Parihar, A., Gupta, S., Lüdtkke, R., Safayhi, H. and Ammon, H. P. (1998). Effects of <i>Boswellia serrata</i> gum resin in patients with bronchial asthma: results of a double-blind, placebo-controlled, 6-week clinical study. <i>Eur. J. Med. Res.</i> , 3 (11), 511-514.