Boswellia serrata

TAXONOMIC CLASSIFICATION:[1]

- Kingdom: Plantae
- Subkingdom: Tracheobionta
- Division: Magnoliophyta
- Class: Magnoliopsida
- Subclass: Rosidae
- Order: Sapindales
- Family: Burseraceae
- Genus: Boswellia
- Species: *serrata*

INTRODUCTION:

Boswellia serrata is a gum resin extracted from a tree, which is burnt as an aromatic or administered as medicine. It has most usage for medicine in Ayurvedic medicine, some reading into Traditional Chinese Medicine, and its usage extends to the Middle East and other tropical regions.[2] Boswellia also known as Indian frankincense, Shallaki, *Salai/Salai guggul*, is an herbal extract taken from the *Boswellia serrata* tree. Resin made from Boswellia extract has been used for centuries in Asian and African folk medicine. It is believed to treat chronic inflammatory illnesses as well as a number of other health conditions. Boswellia is available as a resin, pill, or cream.[3] *Boswellia serrata (Salai/Salai guggul)* is a moderate to large

(https://www.planetayurveda.com/library/boswellia-serrata/)

sized branching tree that grows in dry mountainous regions of India, Northern Africa and the Middle East[4] Medium sized decideduous tree, bark frequently papyraceous. Leaves are alternate, imparipinnate with opposite, sessile, ovate leaflets, crowded at ends of branches. Flowers are small, white, axillary racemes. Fruits are drupes, splited in three valves. Seeds are compressed, pendulous.[1]

CHEMICAL CONSTITUENTS:[4]

The resinous part of *Boswellia serrata* contains monoterpenes (α-thujene); diterpenes (macrocyclic diterpenoids such as incensole, incensole oxide, iso-incensole oxide, a diterpene

alcohol ; triterpenes (such as α- and β-amyrins); pentacyclic triterpenic acids (boswellic acids); tetracyclic triterpenic acids (tirucall-8,24-dien-21-oic acids).

PROPERTIES AND USES:[5]

- Indian Frankincense Is Used For Rheumatoid Arthritis,
- Osteoarthritis: Some studies show that consuming certain extracts of Indian frankincense (5-Loxin, ApresFLEX, formerly known as Aflapin) can reduce pain and improve mobility in people with osteoarthritis in joints. Research shows that it might decrease joint pain by 32% to 65%
- Joint pain (Rheumatism)
- Bursitis, And Tendonitis.
- Ulcerative Colitis: Indian frankincense improves symptoms of ulcerative colitis. For some people, Indian frankincense seems to work as well as the prescription drug sulfasalazine. Some research shows that it can induce disease remission in 70% to 82% of people.
- Abdominal Pain
- Asthma,
- Hay Fever, Sore Throat,
- Syphilis,
- Painful Menstruation,
- Pimples, And Cancer
- A Stimulant, To Increase Urine Flow,
- For Stimulating Menstrual Flow.

SIDE EFFECTS OF EXCESS CONSUMPTION:[5]

Indian frankincense is safe for most adults when taken by mouth for up to six months.

Indian frankincense is possibly safe when applied to the skin for up to 30 days. Over consumption causes stomach pain, nausea, and diarrhea. Also overuse can cause allergic skin rash.

DOSAGE:

300-500 mg orally two to three times daily [6]

RESEARCH:

1. This study was designed to investigate the anti-inflammatory and analgesic effect of different fractions of Boswellia serrata. The effect of different fractions of Boswellia serrata were studied using carrageenan(red purple sea weed) induced paw edema, acetic acid induced writhing response, formalin induced pain, hot plate and tail flick method for studying anti-inflammatory and analgesic activity, respectively. The different fractions of B. serrata, essential oil (10 ml/kg), gum (100 mg/kg, resin (100 mg/kg) oleo-resin (100 mg/kg) and oleogum-resin (100 mg/kg) significantly reduces carrageenan induced inflammation in rats and shows analgesic activity, as determined by acetic acid induced writhing response, formalin induced pain, hot plate and tail flick method. The different fractions of B. serrata showed anti inflammatory and analgesic activity due to the inhibition of 5-lipoxygenase enzyme.[7]
2. Ulcerative colitis is chronic inflammatory diseases of the colon where leukotrienes are play an important role in keeping inflammation active. Boswellic acids, the biologically active ingredients of the gum resin of Boswellia serrata (Sallai guggal), have been shown to be nonredox and noncompetitive inhibitors of 5-lipoxygenase, the key enzyme of leukotriene biosynthesis. In patients suffering from ulcerative colitis grade II and III the effect of Boswellia serrata gum resin preparation (350 mg thrice daily for 6 weeks) on stool properties, histolopathology and scan microscopy of rectal biopsies, blood parameters including Hb, serum iron, calcium, phosphorus, proteins, total leukocytes and eosinophils was studied. Patients receiving sulfasalazine (1 g thrice daily) served as controls. All parameters improved after treatment with Boswellia serrata gum resin. 82% out of treated patients went into remission; in case of sulfasalazine remission rate was 75%.[8]
3. Patients suffering from chronic colitis characterized by vague lower abdominal pain, bleeding per rectum with diarrhoea and palpable tender descending and sigmoid colon were selected for study. The inflammatory process in colitis increases formation of leukotrienes causing chemotaxis, chemokinesis, and synthesis of superoxide radicals and release of lysosomal enzymes by phagocytes. The key enzyme for leukotriene biosynthesis is 5-lipoxygenase. Boswellic acids are inhibitors of the enzyme 5-lipoxygenase. This aim of this research was to study the gum resin of *Boswellia serrata* for the treatment of this disease. Thirty patients, 17 males and 13 females in the age range of 18 to 48 years with chronic colitis were included in this study. Twenty patients were given a preparation of the gum resin of *Boswellia serrata* (900 mg daily divided in three doses for 6 weeks) and ten patients were given sulfasalazine (3 gm daily divided in three doses for 6 weeks) and served as controls. Out of 20 patients treated with *Boswellia* gum resin 18 patients showed an improvement in one or more of the parameters: including stool properties, histopathology as well as scanning electron microscopy, besides haemoglobin, serum iron, calcium, phosphorus, proteins, total leukocytes and eosinophils. In the control group 6 out of 10 patients showed similar results with the same parameters. Out of 20 patients treated with *Boswellia* gum resin 14

went into remission while in case of sulfasalazine remission rate was 4 out of 10. In conclusion, the study shows that gum resin preparation from *Boswellia serrata* could be effective in the treatment of chronic colitis with minimal side effects.[10]

4. The gum resin of Boswellia serrata known as Salai guggal, contains boswellic acids, which have been shown to inhibit leukotriene biosynthesis. In this double-blind, placebo-controlled study, forty patients, 23 males and 17 females in the age range of 18 - 75 years having mean duration of illness, bronchial asthma, of 9.58 +/- 6.07 years were treated with a preparation of gum resin of 300 mg thrice daily for a period of 6 weeks. 70% of patients showed improvement of disease as evident by disappearance of physical symptoms and signs such as dyspnoea, rhonchi, number of attacks, increase in FEV subset1, FVC and PEFR as well as decrease in eosinophilic count and ESR. In the control group of 40 patients 16 males and 24 females in the age range of 14-58 years with mean of 32.95 +/- 12.68 were treated with lactose 300 mg thrice daily for 6 weeks. Only 27% of patients in the control group showed improvement. The data show a definite role of gum resin of *Boswellia serrata* in the treatment of bronchial asthma.[9]

SPECIAL PRECAUTIONS & WARNINGS:[5]

Pregnancy and breast-feeding: Indian frankincense is likely safe when used in amounts commonly found in foods. Usually, it is recommended to avoid its use during pregnancy.

INTERACTION WITH MEDICATIONS:

Boswellia has no known severe interactions with other drugs [6]

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