



# BOSWELLIA

**Common Names:** *Indian frankincense*

**Scientific Names:** *Boswellia serrata*

**Effectiveness:** May be effective to decrease osteoarthritis-related pain and improve physical function. There is a lack of evidence of benefit in rheumatoid arthritis and use is not recommended.

**Safety:** Generally well tolerated when used orally for up to 6 months; long term safety is unknown.

## What is Boswellia?

- Boswellia is a group of flowering plants, found in tropical areas of Africa and Asia. The specific species *Boswellia serrata* is a tree found in India and has various medical properties.

## What it is it used for in people with rheumatic conditions?

- Boswellia has been used for the management of osteoarthritis (OA) to reduce joint pain and improve function.
- There have been studies in patients with rheumatoid arthritis with conflicting results and more research is required.

## How is it thought to work?

- The gum resin that is taken from the bark of the boswellia tree contains substances (boswellic acids), which seem to have anti-inflammatory properties.
- The AKBA (3-O-acetyl-11-keto-beta-boswellic acid) substance seems to have the most anti-inflammatory effect (by inhibiting 5-lipoxygenase), however the amount (mg or %) of AKBA required for effectiveness is not known.

### **Does it Work? What the Science Says:**

5-Loxin® Boswellia Extract 50mg or 125mg (extract enriched to 30% AKBA)

- A randomized, double-blind, placebo-controlled study of 75 otherwise healthy patients with mild to moderate osteoarthritis that responded to NSAIDs or acetaminophen was performed over 90 days. Both doses (50mg bid and 125mg bid) showed clinical improvement on a 100 point VAS pain scale (change (percent) improvement) from baseline): -35.7 (62.5%) and -41.4 (74.4%) versus placebo -15.1 (26.6%) and physical function using a 100 point WOMAC (-17.2 (41.4%) and -21.3 (55.2%) versus placebo -7.2 (17.5%)). More patients in the placebo group used rescue NSAIDs, likely contributing to the clinically important improvement in pain and function. There were no clinically important differences in adverse effects compared to placebo.
- Small well-conducted trial concluded boswellia was effective for OA pain and functionality with a good safety profile.

ApresFLEX® (formerly known as Aflapin) Boswellia Extract 50mg (extract enriched to 20% AKBA)

- A randomized, double-blind, placebo-controlled study of 60 otherwise healthy patients with mild to moderate osteoarthritis that responded to NSAIDs or acetaminophen was performed over 90 days. It compared the use of Aflapin 50mg bid with 5-Loxin 50mg bid, which showed clinically improved 100 point VAS pain scores (change (percent) improvement) from baseline) Loxin -22 (45.6%) and Aflapin -27.5 (57.6%) versus placebo -9.4 (19.7%) and physical function using 100 point WOMAC (L -17.9 (41.5%) and A -25.8 (61.4%) versus placebo -10 (23.8%). More patients in the placebo group used ibuprofen as a rescue medication, likely contributing to the clinically important improvement in pain and function. Neither product caused any clinically important adverse effects.
- Small well-conducted trial concluded both boswellia extracts provided improvement in OA pain and functionality.

### **What are possible side effects and what can I do about them?**

- Boswellia is generally well tolerated when used orally. Some reported side effects include diarrhea, nausea, abdominal pain and heartburn.

## Interactions

### **With drugs:**

- Boswellia (in high doses) may boost the immune system and this MAY reduce the benefit of medications used to treat rheumatoid arthritis and other autoimmune conditions. At doses used for osteoarthritis an anti-inflammatory effect is noted in patients with normal kidney and liver function.
- Boswellia may inhibit the liver enzymes that metabolize many other medications (CYP 1A2, 2C19, 2C9, 2D6, 3A4- moderate interaction). This might increase the side effects of those medications. Check with your pharmacist before using boswellia.

### **With Other Diseases:**

- Boswellia may boost the immune system (at high doses). This may affect the control of autoimmune diseases like rheumatoid arthritis, lupus, and others. At doses used for osteoarthritis an anti-inflammatory effect is noted.