

BROMELAIN

THERAPEUTICS

Brands

- Ananase
- NatuRelief
- Others

Generic

- Bromelain (pineapple extract)



Class

- Anti-inflammatory, pain supplement. It is a nutraceutical agent that is sold over-the-counter without a prescription

Used for

Possible beneficial effects in:

- Pain management, arthritic – inflammatory pain



How the Drug Works

- Still undetermined; bromelain may affect migration of neutrophils to sites of acute inflammation

How Long until It Works

- Undetermined. Bromelain can be used in short treatment cycles for acute inflammatory pain or arthritic pain

If It Works

- Short treatment cycles can be repeated

If It Doesn't Work

- Alternative supplements, anti-inflammatories, or analgesic medications as per physician's recommendations



Best Augmenting Combos for Partial Response or Treatment-Resistance

- In combination with current analgesic agents

Tests

- Undetermined

ADVERSE EFFECTS (AEs)

- Anecdotally, nausea and other GI disturbances have been reported. Bromelain may also cause allergic reactions, especially in people who are allergic to pineapple, wheat, celery, papain, carrot, fennel, cypress pollen, or grass pollen

How Drug Causes AEs

- Undetermined

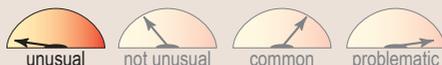


Life-Threatening or Dangerous AEs

- Bromelain is possibly safe for most people when taken in appropriate amounts. Limited published information on safety

Weight Gain

- Undetermined, but unlikely



What to Do about AEs

- Determine if the GI AEs disappear over time, otherwise discontinue bromelain; for nausea, trial of proton pump inhibitors

DOSING AND USE

Usual dosage

- The FDA has not established a recommended dosage for bromelain. The product is sold as a nutritional supplement, not a medication. Bromelain can be taken 2 or 3 times a day between or before meals. In Germany, where bromelain is used to reduce swelling after surgery, reportedly the standard dose given to patients is 80–320 mg/day

Dosage Forms

- It varies according to preparations

How to Dose

- May be taken 2 or 3 times a day. Bromelain is most effective when taken on an empty stomach

Overdose

- Unknown

Long-Term Use

- Recommended to be taken in cycles

Habit Forming

- Unknown, but unlikely

How to Stop

- No need for tapering schedule

Pharmacokinetics

- Unknown

**Drug Interactions**

- Might impair effects of amoxicillin and tetracyclines
- Might impair coagulation, and might increase bruising and bleeding when taken with aspirin, clopidogrel (Plavix), NSAIDs, dalteparin (Fragmin), enoxaparin (Lovenox), heparin, ticlopidine (Ticlid), and warfarin (Coumadin)

SPECIAL POPULATIONS**Renal Impairment**

- Undetermined

Hepatic Impairment

- Undetermined

Cardiac Impairment

- Reportedly, bromelain supplementation may affect heart rate

Elderly

- Reportedly well tolerated

**Children and Adolescents**

- Not recommended in neonates and young children

**Pregnancy**

- Unknown about safety of bromelain during pregnancy

Breast-Feeding

- Not recommended

THE ART OF PAIN PHARMACOLOGY**Potential Advantages**

- Adjuvant, in combination with current analgesics

Potential Disadvantages

- Unknown

Primary Target Symptoms

- Can be a nutritional supplement in patients with osteoarthritic pain

**Pearls**

- Reportedly, for **osteoarthritic knee pain best benefit when combined with trypsin and rutin (Phlogenzym)**. This combination may be as effective as some prescription painkillers
- In experimental animal models of colitis, 6 months of dietary bromelain decreased the severity of colon inflammation



Suggested Reading

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