

Bromelain (Pineapple enzyme)

Posted in [Other Vital Nutraceuticals & Nutrients](#) on Sat December 31, 2005

GENERAL DESCRIPTION:

Bromelain is a proteolytic enzyme (an enzyme that digests proteins) found in fresh pineapple. It is often used to treat muscle injuries and as a digestive aid.

ROLE IN ANTI-AGING:

Bromelain is a natural **anticoagulant** that works by breaking down the blood-clotting protein fibrin. This may help to explain why results of at least two clinical trials suggest that the enzyme can help to improve the symptoms of angina and thrombophlebitis. As well as thinning the blood, bromelain also **thins mucus**, and thus maybe of benefit to asthmatics and people suffering from chronic bronchitis. There is also evidence that bromelain can trigger beneficial changes in white blood cells, and thus may **improve immune function**. However, whether or not the enzyme would be beneficial to immunocompromised people has not been established clinically. Bromelain has potent **anti-inflammatory** properties and therefore may be useful in promoting the healing of minor muscle injuries such as sprains and strains. Results of one study also found evidence to suggest that it can help to improve the symptoms of **rheumatoid arthritis**. When applied topically it may help to speed **wound healing**. There has also been some suggestion that bromelain has anti-cancer properties, although this has not been proven. Several recent studies have linked chronic inflammation to cancer, thus any anti-cancer action of bromelain could be due to its anti-inflammatory properties. The enzyme may also **enhance the effect of the antibiotics** amoxicillin, erythromycin, penicillamine, and penicillin. In a study of people with urinary tract infections, 100% of participants given antibiotics in combination with bromelain and another enzyme called trypsin were cured of their infection, compared with just 46% who received antibiotics alone.

Bromelain aids **digestion** by enhancing the effects of the digestive enzymes trypsin and pepsin. It can also help to prevent heartburn by ease diarrhea, if either are caused by a deficiency of digestive enzymes. Bromelain supplements often contain a plant pigment called quercetin. The two substances are found in combination simply because they enhance each other's antiinflammatory actions, and that bromelain appears to improve quercetin absorption.

DEFICIENCY SYMPTOMS: Not applicable

THERAPEUTIC DAILY AMOUNT:

Bromelain is measured in MCUs (milk clotting units) or GDUs (gelatin dissolving units), where one GDU equals roughly 1.5 MCU. Potent bromelain products contain approximately 2,000 MCU per gram. Some doctors recommend taking up to 3,000 MCU

thrice daily for several days, and then decreasing the dosage to three daily 2,000 MCU doses.

MAXIMUM SAFE LEVEL: Not established

SIDE EFFECTS/CONTRAINDICATIONS:

Bromelain is generally regarded as being safe and side effect-free when taken as directed. However, some people may be allergic to bromelain as it is derived from pineapple. Bromelain is not recommended for people with active gastric or duodenal ulcers. People taking anticoagulant drugs such as warfarin should not take supplementary bromelain without consulting their physician.