

Bromelain

Nutritional Enzyme Support



- Supplies the Powerful Proteolytic Enzyme Derived from Pineapple
- Enhances the Digestion and Assimilation of Food
- Reduces Protein-Based GI-Tract Derived Allergins
- Inhibits the Formation of Undesirable Prostaglandins & Eicosanoids
- Exhibits Fibrinolytic (Fibrin-Dissolving) Properties
- Helps to Reduce Excessive Platelet Aggregation

supplies citations to the scientific data which supports these uses.

Quality And Potency

The potency of bromelain is measured in gelatin digesting units (GDUs) per gram. MCUs (milk clotting units) are also used to define bromelain's potency. When evaluating bromelain, one should look for the potency per tablet or capsule. For example, when there is a "1000 GDU" claim on a label, there may be confusion as to whether this 1000 GDU is provided by a single 500 mg tablet or capsule or, as is often the case, in one gram of raw material. If this reference is 1000 GDU per gram, a 500 mg tablet/capsule (or up to 700 mg with excipients) contains only 500 GDU of bromelain. **Jarrow FORMULAS®** Bromelain products are always accurate to their label claim.

Usage

As a dietary supplement, take 1 to 2 tablets with meals or as directed by your qualified health consultant. For special proteolytic enzyme benefits, may be taken between meals on an empty stomach except by individuals with ulcers. Those individuals who are allergic to pineapple, honeybee stings or olive tree pollen should use this supplement only under the supervision of a licensed health practitioner.

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Several recent books argue that the body has an enzyme "bank account" which can be overdrawn, as it were, when the wrong foods are eaten or wrong dietary practices are followed. Edward Howell in *Enzyme Nutrition: The Food Enzyme Concept*, stresses that foods can be used to supplement aspects of the body's own enzyme production. Anthony J. Cicchoke, author of *Enzymes & Enzyme Therapy* and *The Complete Book of Enzyme Therapy*, makes quite specific recommendations in this regard and

Sparing The Body's Own Proteolytic Enzymes

certain substrates or "building blocks" for compounds produced by the body. One problem with modern diets is that these are overly rich in omega-6 fatty acids, such as those found in corn and many other seed oils. The omega-6 fatty acids, when taken in excess or used by those who are insulin resistant, can increase the body's production of inflammation-producing compounds which are members of certain classes of prostaglandins and eicosanoids. A nutritional imbalance thus can lead to the overproduction by the body of substances which promote inflammation, fluid retention, pain, and so forth. Bromelain can help to re-establish balance by promoting the production of anti-inflammatory prostaglandins, eicosanoids and related or associated compounds. In these actions, bromelain is complemented by nutritional support such as that provided by supplemental omega-3 fatty acids derived from fish oils and flax seed.

Reducing Sources Of Inflammation And Platelet Aggregation

its wide range of pH tolerance is also important for bromelain's use by the elderly. As we age, our ability to secrete hydrochloric acid in the stomach declines. Therefore, much of the digestive activity which should take place under acid conditions in the stomach tends to continue in the alkaline conditions of the small intestine. Protein digestion is impaired due to this factor. Because bromelain is active under both acid and alkaline conditions, it is superbly suited for helping older individuals to digest protein-based foods.

Bromelain offers at least two further and somewhat unusual benefits. First, it helps to reduce the entry of allergins into the system from the digestive tract. Most allergins are proteins, as can be surmised from the widespread allergies to milk and egg proteins. If large protein molecules are inadequately digested, they may pass into the bloodstream and heighten allergic responses in general. Thus bromelain's powerful proteolytic actions, by improving the digestion of proteins, can help to remove some common sources of hypersensitivity. Second, bromelain appears to enhance the assimilation of many nutrients. These include glucosamine, sulfur and bioflavonoids.

Bromelain may exert a beneficial effect upon inflammation by stimulating the production of "active peptides" which increase levels of anti-inflammatory prostaglandins (PGs). This is an indirect effect such as can be produced nutritionally by altering the balance of

Aiding Digestion And Assimilation

Bromelain has a long history of use in folk medicine traditions of the Pacific Rim. This mixture of compounds (bromelain A and B) extracted from the stem of the pineapple (*Ananas comosus*) has been used in herbal healing traditions dating back to the 17th century to address different ailments and complaints.

Bromelain, because of its tolerance of both acid and alkaline conditions (pH range 3-8), is active in the relatively acid (low pH) environment of the stomach as well as in the relatively alkaline environment of the small intestine. This means that the extract can be taken at the beginning or the end of a meal and yet remain effective as an aid to digesting proteins.

Bromelain in joint tissues and in the muscles.

in pineapple sap and in the pineapple stem. Much concentrated source of this supplement. Bromelain is a protein-digesting enzyme which is present naturally in pineapple sap and in the pineapple stem. Much smaller amounts are found in the fruit. Bromelain is classified as a proteolytic enzyme because of its ability to digest proteins. Due to its ability to spare the body's own store of proteolytic enzymes, bromelain supplementation may affect protein turnover rates in the body. This influence extends to the proteins found in joint tissues and in the muscles.

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Proteolytic Enzyme Support