

# 3000 GDU Bromelain

**Doctor's  
BEST**

Science-Based Nutrition™



bromelain per day for 3 weeks to 3 months showed beneficial effects in overall joint health.<sup>5</sup>

A 2002 open label human trial confirmed the ability of bromelain to support healthy joint function. One hundred twenty-six participants were randomly assigned to receive either 200 or 400 mg of bromelain daily for 30 days. Individuals reported their results via questionnaires that included indicators of joint health as well as psychological well-being. Both groups reported significant benefits. Overall, bromelain was found to promote joint health, while additionally showing dose-dependent improvements in feelings of well-being and general health.<sup>6</sup>

## Doctor's Best 3000 GDU Bromelain supports healthy respiratory function.\*

In several randomized, controlled clinical trials, supplementation with bromelain was found to be supportive of respiratory health compared to placebo.<sup>7,8,9</sup> In one human study, 16 men and 32 women were given either placebo or two bromelain pills, taken four times daily for six days. The bromelain group benefited with an enhanced breathing ability and a higher occurrence of reporting a "good" rating for the overall effect of the supplement.<sup>8</sup> In a similar double-blind clinical trial of 59 subjects that investigated the respiratory implications of bromelain usage, the 29 subjects given bromelain four times daily had higher ratings of "excellent" improvement compared to placebo.<sup>9</sup> An animal study suggests that the mechanism of action for the enhanced respiratory function could be through bromelain's influence over immune response.<sup>10</sup>

## Doctor's Best 3000 GDU Bromelain supports healthy cardiovascular function.\*

Evidence suggests that bromelain can modulate adhesion molecules on

## INGREDIENTS

Doctor's Best 3000 GDU Bromelain is a crude extract from the *Ananas comosus* (pineapple) plant that contains one of the most highly regarded and studied plant enzymes. The use of bromelain has foundations in folk medicine, as *Ananas comosus* was used by the aboriginal inhabitants of Central and South America for various facets of health promotion. A 17th century explorer from Europe noted that the extract from the plant "admirably recreates and exhilarates the Spirits and comforts the Heart."<sup>1</sup>

Bromelain is renowned for its protein digesting (protease) activity. The ability of the thiol-endopeptidase enzymes in bromelain to break down proteins leads to bromelain's most noted health-promoting properties. The enzymatic activity of bromelain is measured by its ability to digest various substrates. GDU, or gelatin-digesting units, are a common measure of bromelain's potency. Doctor's Best currently has the highest potency bromelain available on the market. Bromelain is known for its enzymatic and immune-modulating activities as well as its contributions to joint health maintenance and healthy circulation.\*

## BENEFITS

### Doctor's Best 3000 GDU Bromelain is a proteolytic enzyme that supports healthy immune function.\*

Bromelain has the ability to activate various immune cells and their cytokines.<sup>2</sup> Cytokines are signaling molecules secreted by immune cells that act as messengers to alert other immune cells. In vitro trials have shown that bromelain can alter immune cell secretion of cytokines in a way that would be favorable for maintaining balance in the human immune system.<sup>3</sup> There is also in vitro evidence that bromelain can alter T cell signal transduction, facilitating immune cell communication, which would also contribute to a balanced immune response in the human body.<sup>4</sup> Bromelain's enzymatic activity is key in these reactions, and Best 3000 GDU Bromelain has the highest potency per capsule.

### Doctor's Best 3000 GDU Bromelain supports joint health.\*

Several clinical studies have also looked at the effects of bromelain on the musculoskeletal system. A series of 29 case studies using 60-160 mg of

## Supplement Facts

Serving Size 1 capsule

Servings per container 90 servings

	Amount per serving	% Daily Value
Bromelain	500 mg	†
	(3,000 gelatin-digesting units (GDU)/gram)	

† Daily Value not established.

**Other Ingredients:** Cellulose, modified cellulose (vegetarian capsule).

**Suggested Adult Use:** Take 1 capsule 2 - 3 times daily away from food, or as recommended by a nutritionally-informed physician.

**Non-GMO and Gluten Free**  
Store in a cool dry place.

\* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

blood cells and the cells lining the walls of blood vessels, thereby promoting healthy circulation. Bromelain does so through its proteolytic activity—cleaving proteins from the surface of cells. Several important human proteins affected include fibrin, albumin, casein, angiotensin II and bradykinin. Fibrin and albumin are blood proteins that each provide contributions to the maintenance of a healthy blood flow, while angiotensin II and bradykinin play a role in the pliability of blood vessels. All of these compounds are highly involved in complex systems that are implicated in a healthy flow of blood and optimal cardiovascular health.<sup>1,11</sup>

While bromelain is most noted for its enzyme activity, not all of the physiological activity of bromelain can be attributed to its protease activity. It appears that the other compounds within bromelain act synergistically to provide its wealth of benefits.<sup>12</sup> Given its wide range of activity, bromelain can be valued as a factor in healthy maintenance of multiple systems with-in the human body.

## SCIENTIFIC REFERENCES



1. Taussig SJ and Batkin S. zyme complex of comosus) and its clinical application. col. 1988;22(2):191-203.
2. Maurer, H.R., Bromelain: biochemistry, pharmacology and medical use. Cellular and Molecular Life Sciences. 2001; 58:1234-1245.
3. Huang J., et al. Bromelain inhibits lipopolysaccharide-induced cytokine production in human THP-1 monocytes via the removal of CD14. Immunological Investigations. 2008; 37:263-277.
4. Secor E.R., et al. Bromelain treatment reduces CD25 expression on activated CD4+ T cells in vitro. International Immunopharmacology. 2009; 9:340-346.
5. Brien S., et al. Bromelain as a treatment for osteoarthritis: a review of clinical studies. Evidence-based Complementary and Alternative Medicine. 2004; 1(3):251-257.
6. Walker A.F., Bromelain reduces mild acute knee pain and improves well-being in a dose-dependent fashion in an open study of otherwise healthy adults. Phytomedicine. 2002; 9:681-686.
7. Guo R., et al. Herbal medicines for the treatment of rhinosinuitis: A systematic review. Otolaryngology - Head and Neck Surgery. 2006; 135:496-506.
8. Ryan, R.E. A double-blind clinical evaluation of bromelains in the treatment of acute sinusitis. Headache. 1967; 7(1):13-17.
9. Taub, S.J. The use of bromelains in sinusitis: a double-blind clinical evaluation. Eye, Ear, Nose & Throat Monthly. 1967; 46(3):361-365.
10. Secor, E.R., et al. Bromelain exerts anti-inflammatory effects in an ovalbumin-induced murine model of allergic airway disease. Cellular Immunology. 2005; 237:68-75.
11. Kumakura S, et al. Effect of bromelain on kaolin-induced inflammation in rats. Eur J Pharmacol 1988;150(3):295-301.
12. Anon. Bromelain Monograph. Alternative Medicine Review. 1998; 3(4):302-305.

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