

Proteolytic enzyme blend

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Natto-Serrazime™ is a unique blend of two potent fungal proteolytic enzymes, Nattozimes® (derived from the fungi *Aspergillus oryzae* and *Aspergillus melleus*) and Serrazimes®, which are used for cardiovascular, anti-inflammatory, respiratory, and immune support. Studies have shown that Nattozimes®¹ and Serrazimes® have the same thrombolytic and fibrinolytic activities as the popular enzyme products Nattokinase and Serrapeptidase; therefore, they can be used as a 1:1 substitution for these applications.

Nattozimes®

Nattozimes® is a proprietary blend of fungal proteolytic enzymes that matches the *in vitro* fibrinolytic activity of nattokinase, an enzyme isolated from natto, a traditional Japanese fermented soy product time-honored for its therapeutic benefits. Although virtually unknown in the West, natto has been a dietary staple in Japan for centuries, where it has long been recognized for its beneficial effects on cardiovascular health. An additional benefit of natto is the presence of nattokinase, a potent fibrinolytic and antithrombic protease enzyme that degrades plasmin and fibrin and may potentially dissolve blood clots.

As a proteolytic enzyme, Nattozimes® may be helpful for cardiovascular health, particularly in those who are prone to clot formation and fibrous tissue buildup.* Orally supplemented nattokinase is detectable in serum, peaking at approximately 11-15 hours after ingestion (one-100mg dose).² This indicates that oral supplementation is an effective way of delivering this enzyme to tissues, and that it remains bioactive after digestion.

Nattokinase has natural ACE inhibition activity.³ In a double-blind, randomized, placebo controlled trial in subjects with pre-hypertension or stage 1 hypertension, compared to placebo, nattokinase supplementation resulted in small decreases in systolic and diastolic blood pressure, as well as renin activity.⁴ Nattokinase supplementation in spontaneously hypertensive rats also reduced blood pressure, fibrinogen and angiotensin II.⁵

Owing to the thrombolytic and fibrinolytic nattokinase-matching activity of proteases in Nattozimes®, these proteases may be effective for prevention and treatment of thrombosis and embolism.⁷ Nattokinase inhibits thromboxane B2 and thrombin-induced platelet aggregations. It has been shown to delay thrombosis following oxidative injury to the arterial wall and to suppress platelet aggregation induced by thrombin, with effects comparable to those of aspirin, without the latter's serious adverse side-effects, which may include gastric ulcers and bleeding.⁷ Nattokinase inhibits blood clotting triggered by thrombin and also blocks adhesion of platelets to injured vessel walls. Additional rat studies support a beneficial role for nattokinase in reducing the effects of injury to the arterial endothelium.⁸ Dietary nattokinase supplementation suppressed intimal thickening produced by endothelial injury, while thrombi near the injured vessel walls exhibited lysis and detached from the vessel walls of the femoral artery.

In healthy subjects as well as in a cohort with cardiovascular risk factors, nattokinase supplementation resulted in decreased plasma levels of fibrinogen and clotting factors VII and VIII, which are associated with increased risk for cardiovascular disease.⁹⁻¹¹

Serrazimes®

This patented ingredient mimics the properties of serrapeptase (a.k.a. serratiopeptidase or serrapeptidase), a proteolytic enzyme generated by native *Serratia* bacteria in the digestive system of silkworms. (This enzyme dissolves the worm's cocoon.) Activity of this enzyme is especially helpful for respiratory conditions and may augment the efficacy of antibiotics by disrupting the formation of bacterial biofilms.

Serratiopeptidase may be beneficial for the sinuses, lungs, and immune system. Four weeks of oral supplementation with serratiopeptidase reduced the viscosity of mucus in patients with chronic sinusitis.¹² A double-blind RCT showed that, compared to placebo, serratiopeptidase supplementation resulted in reductions in symptoms of acute or chronic ear, nose and throat disorders in as little as four days.¹³ Researchers concluded that serratiopeptidase is anti-inflammatory and anti-edematous, and acts rapidly on localized inflammation.

Natto-Serrazime™ may help support*:

- Cardiovascular health
- Respiratory health
- Immune function
- Healthy joints
- A healthy inflammatory response
- Optimal digestion

In patients with chronic airway disease, four weeks of supplementation with serrapeptase resulted in significant decreases in the weight, viscosity, percentage solid component, and neutrophil count of sputum collected throughout the morning. Frequency of coughing and expectoration also decreased.¹⁴ (The study employed a serrapeptase dose of 30 mg/day; Natto-Serrazime™ provides 33 mg/capsule.)

The proteolytic activity of serrapeptase makes it effective for reducing post-operative pain and swelling, particularly after oral-facial surgery. Compared to placebo, this enzyme significantly reduced buccal swelling after sinus surgery performed via retracting the cheek to treat chronic empyema (a buildup of pus in the pleural space).¹⁵ It was administered prophylactically the day before the surgery, the night of the surgery, and for five days thereafter. Serrapeptase has also demonstrated efficacy compared to placebo in reducing pain intensity and cheek swelling after surgical removal of third molars (“wisdom teeth”).¹⁶ This proteolytic enzyme may also be helpful in carpal tunnel syndrome.¹⁷

Regarding the immune system, serratiopeptidase has been shown to help disrupt the formation of bacterial biofilms by *Listeria* and *Staphylococcus* organisms. Biofilms are often stubborn, persistent, and resistant to breakup by both physical and chemical means, making them key contributors to chronic infection and illness. In addition to its own potency, serratiopeptidase may also enhance antibiotic sensitivity, making it a useful addition to combination therapies in fighting antibiotic-resistant illnesses.¹⁸⁻²⁰

Side Effects, Contraindications, and Drug Interactions

Systemic proteases, such as those in Natto-Serrazime™, are known to have antithrombotic properties. Individuals who suffer from clotting or bleeding disorders and who are being treated with antithrombotic medications (e.g., warfarin, coumadin, aspirin) may experience increased clotting times when using this product. Individuals with ulcers or who have had recent surgery should not take Natto-Serrazime™.

Supplement Facts

Serving Size 1 capsule

Amount Per Serving	% Daily Value
Nattozimes® (4,516 FU) exo/endo proteases	129 mg *
Serrazimes® (20,000 U) exo/endo proteases	33 mg *

*Daily Value not established.

Other Ingredients: Rice bran, vegetable cellulose, microcrystalline cellulose, water.

Recommended Use

- As a dietary supplement, take one capsule per day, or as directed by your health care practitioner.

Additional Dosing Suggestions

- Acute: 1 capsules 3-4x per day (away from meals)
- Chronic: 1 capsules 2-3x per day (away from meals)
- History of heart disease: 4 capsules per day (away from meals)

For a list of references cited in this document, please visit:

https://catalog.designsforhealth.com/assets/itemresources/Natto_Serrazime_References.pdf

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

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