

# BORN nutrition



Maintains Normal Inflammatory Balance | Provides Support for a  
Healthy Immune Response  
Supports Recovery from Exercise and Physical Stress | Helps Support  
Blood Vessel and Cardiovascular Health

## SanareZyme

This product, a comprehensive multi-enzyme formula, helps support normal blood circulation and vessel function, and maintains normal inflammatory balance. It also promotes recovery from exercise and physical stress by supporting the breakdown of unwanted proteins, aiding the body's natural repair processes. For a normal recovery process, this product has applications for a broad range of health needs. This product's enzyme blend includes, protease, amylase, papain, trypsin, lipase, chymotrypsin, bromelain and serratiopeptidase, along with quercetin and rutin, two well-known flavonoids.

### Overview

Enzymes are complex proteins that catalyze metabolic reactions throughout the body, and sufficient levels are required for optimizing many of the body's functions. Although the body produces its own supply of enzymes, the amount produced can vary from person to person and is affected by age, diet, biochemistry and stress. Enzymes fall into three broad categories: metabolic enzymes, manufactured by cells to carry out various functions; digestive enzymes, primarily manufactured by the pancreas to digest foods and absorb nutrients and food enzymes; and exogenous (from outside the body) enzymes from plants and animals, also necessary for aiding and accelerating digestion. Systemic enzymes support the breakdown of unneeded proteins, which research has shown to be an important component of cardiovascular health and supporting optimal blood vessel function. In cases of soft tissue discomfort from post-exercise pain, systemic enzymes help break down fibrin to support areas of inflammation and reduce recovery times. Research has shown that proteolytic enzymes are well-absorbed from the gastrointestinal tract into the systemic circulation.<sup>1,2</sup>

### Research†

Studies have highlighted the efficacy of systemic enzyme therapy for a variety of uses, including maintaining normal inflammatory balance, nasal passage health, bronchial health,<sup>3,4</sup> musculoskeletal health and exercise-related recovery.<sup>5-8</sup> In vitro, animal and human data show that enzyme therapies are capable of cleaving immune complexes, which are known inflammatory mediators.<sup>9,10</sup> In one study, among four different types of immune complexes prepared in vitro and incubated with different concentrations of an enzyme mixture (papain or pancreatin) approximately 90% of the antigen complexes were cleaved by low doses of enzymes. In addition, antibody complexes were gradually cleaved by concentrations from 5-80 mg.<sup>11</sup>

Proteolytic enzymes have also been shown to reduce levels of the immune marker, TGF- $\beta$  (Transforming Growth Factor beta), by converting the protease inhibitor alpha2M from the slow form into the fast form, which binds and inactivates TGF- $\beta$ . In one study, oral proteolytic enzyme therapy reduced TGF- $\beta$  levels, maintaining normal inflammatory balance.<sup>12</sup> A study done in children who were given either a polyezyme mixture or a monoenzyme agent, found that those receiving the polyezyme mix maintained optimal balance of proinflammatory cytokines (IL-2, IL-6, and TNF- $\alpha$ ). Additionally, the beneficial cytokine IL-4 demonstrated the potency of polyezyme therapy to maintain normal inflammatory balance and promote tissue recovery.<sup>13,14</sup>

In addition, enzyme therapy supports improvements in discomfort, stiffness and mobility among those with musculoskeletal challenges.<sup>15</sup> Researchers also found significant improvements among 103 patients, with minor knee complaints given enzyme therapy.

Strong peptidase enzymes have been used in both Japan and Europe for maintaining normal inflammatory balance since the early 1980s, with systematic reviews supporting their beneficial role in lowering the release of harmful amines in various tissues, balance the bodies systemic inflammatory burden, as well as supporting the breakdown of unwanted proteins without affecting healthy tissues.<sup>16,17</sup> Additionally, in an animal study, similar enzymes were found to be effective as more traditional options for maintaining normal inflammatory balance.

Research has also shown that flavonoids, such as rutin and quercetin, maintain normal inflammatory balance. Specifically, they have been shown to reduce the production of TNF- $\alpha$  by macrophages, microglial cells and mast cells helping to maintain normal inflammatory balance.<sup>16</sup> In a randomized, single-blind study on the antioxidant effect of rutin, after six weeks, those receiving rutin had significantly elevated plasma flavonoids (quercetin, kaempferol and isorhamnetin) displaying the powerful antioxidant effect of rutin.<sup>17</sup> Quercetin was also found to decrease the expression and production of TNF- $\alpha$ , IL-1beta, IL-6, and IL-8.<sup>18</sup> Finally, systemic enzyme therapy has been shown to stimulate internal defenses to support a normal musculoskeletal inflammatory response. Systemic enzyme therapy has been shown to modulate cytokine levels and shift "immune balance" toward a calm, efficient immune state.

### Directions

2 capsules per day on an empty stomach or as recommended by your health care professional.

### Does Not Contain

Gluten, yeast, artificial colors and flavors.

### Cautions

If you are pregnant or nursing, consult your physician before taking this product.

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<b>Supplement Facts</b>		
Serving Size 2 Capsules		
Servings Per Container 60 & 120		
2 capsules contain	Amount Per Serving	% Daily Value
Pancreatin	450 mg	*
Protease (from Pancreatin) (90,000 USP Units)		*
Amylase (from Pancreatin) (90,000 USP Units)		*
Lipase (from Pancreatin) (7,200 USP Units)		*
Papain	180 mg (1,080,000 USP Units)	*
Trypsin	72 mg (18,000 USP Units)	*
Chymotrypsin	27 mg (2,025 USP Units)	*
Bromelain (from Pineapple)	135 mg (324 GDU)	*
Peptidase	40 mg (24,000 Serratiopeptidase Units [SPU])	*
Quercetin Dihydrate	75 mg	*
Rutin	75 mg	*
* Daily Value not established		

## References

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