

# VASCUZYME



## CLINICAL APPLICATIONS

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

## CARDIOVASCULAR HEALTH

A comprehensive multi-enzyme formula, Vascuzyme helps support normal blood circulation, vessel function and a normal inflammatory response. It also promotes recovery from exercise and physical stress. By supporting the breakdown of unwanted proteins generated during injury and tissue damage for a normal recovery process, Vascuzyme has applications for a broad range of health needs. Vascuzyme's enzyme blend includes protease, amylase, papain, trypsin, lipase, chymotrypsin and bromelain, along with quercetin and rutin, two well-known flavonoids. It is formulated with a unique delayed-release delivery system to ensure the enzymes are released intact in the small intestine.

### 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. Vascuzyme supports 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 and exercise recovery, Vascuzyme helps to

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 (GI) 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 supporting a normal inflammatory response, 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, supporting the normal inflammatory process.<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 pro-inflammatory cytokines (IL-2, IL-6, and TNF- $\alpha$ ). The anti-inflammatory cytokine IL-4 demonstrated the potency of polyezyme therapy to support a healthy cycle of inflammation

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and promote tissue recovery.<sup>13</sup> Enzyme therapy has also been shown to reduce swelling.<sup>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 knee discomfort given enzyme therapy.

Research has also shown that flavonoids, such as rutin and quercetin, support a normal inflammatory response. Specifically, they have been shown to reduce the production of TNF- $\alpha$  by macrophages, microglial cells and mast cells helping to maintain a healthy cycle of inflammation.<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" away from immune hyperactivity and create a calm, efficient immune state.

## Directions

3 tablets one to three times 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.

# Supplement Facts

Serving Size 3 Tablets  
Servings Per Container 60 & 120

3 tablets contain	Amount Per Serving	% Daily Value
Calcium (as Calcium Carbonate)	120 mg	9%
<b>Enzyme Blend</b>	<b>705 mg</b>	
Providing:		
Protease (from Pancreatin)	90,000 USP Units	*
Amylase (from Pancreatin)	90,000 USP Units	*
Papain	1,080,000 USP Units	*
Trypsin	18,000 USP Units	*
Lipase (from Pancreatin)	7,200 USP Units	*
Chymotrypsin	2,025 USP Units	*
Bromelain (from Pineapple)	324 GDU	*
Quercetin Dihydrate	75 mg	*
Rutin	75 mg	*
* Daily Value not established		

ID# 126180 180 Tablets

ID# 126360 360 Tablets

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## References

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