Discussion

Enzymes are complex proteins that catalyze metabolic reactions throughout the body, and sufficient levels are necessary for optimizing many bodily functions. Though the body naturally produces its own supply of enzymes, production can vary with age and biochemical individuality.*

Proteolytic enzymes, also known as proteases, specifically break down proteins into peptides and amino acids through the process of "proteolysis." For example, proteases produced by the pancreas assist in the digestion of dietary protein. Some proteases, such as trypsin, are then resorbed, transported in the bloodstream, and resecreted by the pancreas. Enzymes in circulation are bound to antiprotease alpha-2-macroglobulin to protect them from being degraded by other serum proteases and to retain their enzymatic activity.*

OPTIMUM REPAIR is a proteolytic enzyme formula designed to be absorbed across the gastrointestinal mucosa and into circulation.[2] When distributed systemically, proteolytic enzymes can break down proteins and complexes generated during injury and tissue damage. This action supports the body’s normal recovery process.*

In vivo studies suggest that trypsin and other proteases, though normally confined to the bloodstream, are able to enter the site of inflammation.[3] At this site, they are able to support immune function and the body’s normal response to inflammation. Research suggests that orally administered proteolytic enzymes may exert this beneficial effect as well.[3,4] It is thought that they function as proteinase-activated receptor (PAR) modulators, a feature which allows them to contribute to immune and cytokine balance.[5] Proteolysis of intestinal microorganisms may contribute to the immunostimulatory effects of oral proteolytic enzymes as well.[6]

Proteolytic enzymes have been used worldwide for decades to support health and healing. For example, research on bromelain (an enzyme obtained from pineapple) suggests that it supports the body’s normal response to inflammation and eicosanoid modulation.[7-9] Furthermore, it is suggested that bromelain supports the body’s innate and adaptive immune function,[10,11] signifying an effect beyond that of proteolysis in some cases.*

Serrapeptase (also known as serratiopeptidase) is an enzyme produced by microorganisms in the gastrointestinal tract of silkworms. Silkworms use it to digest their cocoons. Multi-center, double-blind studies suggest that serrapeptase significantly supports tissue integrity and comfort and is well-tolerated.[12,13] Pancreatin in OPTIMUM REPAIR is a mixture of pancreatic enzymes containing chymotrypsin, trypsin, amylase, and lipase. The papain present is a proteolytic enzyme derived from papaya fruit.*

The effect of combining various proteolytic enzymes has been studied closely for decades. For example, the combination of trypsin and chymotrypsin has a history of use in the support of tissue integrity and healing, with positive results in early double-blind trials.[14-16] The combination of bromelain, trypsin, and rutin has been researched and found to produce positive results as well.[17] For example, in a six-week, randomized, double-blind, parallel group trial (n=90), oral proteolytic enzymes were well tolerated and considered to support the body’s normal response to inflammation to a similar degree as the other compounds studied.[18] Another randomized double-blind controlled study using systemic enzyme therapy (a combination of bromelain, trypsin, and rutin) reported “remarkable differences” in tissue comfort and integrity in subjects who received the enzyme therapy.*[19]

OPTIMUM REPAIR contains a combination of pancreatin, papain, rutin, bromelain, trypsin, chymotrypsin, and serrapeptase in acid-resistant capsules that are designed to withstand gastric juices, ultimately allowing direct absorption into the bloodstream. For best results, the formula should be consumed on an empty stomach.*

*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.
**Supplement Facts**

**Serving Size:** 5 Capsules  
**Servings Per Container:** 20

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<thead>
<tr>
<th>Nutrient</th>
<th>Amount Per Serving</th>
<th>% Daily Value</th>
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<tbody>
<tr>
<td>Pancreatin (from porcine)</td>
<td>125,000 USP</td>
<td>**</td>
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<tr>
<td>Papain (from papaya)</td>
<td>4,000,000 PU</td>
<td>**</td>
</tr>
<tr>
<td>Rutin (from Sophora japonica)</td>
<td>250 mg</td>
<td>**</td>
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<td>Bromelain (from pineapple)</td>
<td>540 GDU</td>
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<td>Trypsin (from porcine)</td>
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<td>Chymotrypsin (from porcine)</td>
<td>37,500 USP</td>
<td>**</td>
</tr>
<tr>
<td>Serrapeptase</td>
<td>60,000 U</td>
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**Other Ingredients:** Inulin, HPMC (capsule), microcrystalline cellulose, vegetable stearic acid, vegetable magnesium stearate, and silica.

**Directions**

Take five capsules twice daily on an empty stomach, or as directed by your healthcare practitioner.

Children, pregnant or lactating women, individuals using blood thinners, and individuals with bleeding disorders or liver damage should consult their healthcare practitioner prior to use. Do not use if tamper seal is damaged.

**References**


**Does Not Contain**

Wheat, gluten, soy, dairy products, fish, shellfish, peanuts, tree nuts, egg, artificial colors, artificial sweeteners, or preservatives.

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