



# MicroChitosan™

## Chitosan Oligosaccharide

- May support enhanced detoxification of Herxheimer's reactions\*
- Promotes the growth of friendly bifidobacteria and lactobacilli\*
- Helps prevent lipid peroxidation, and promotes the activity of antioxidant enzymes\*
- Animal research suggests it may potentially have other detoxification activities\*

MicroChitosan™ contains chitosan oligosaccharides as well as a small amount of chitosan. Chitosan oligosaccharide has a much smaller molecular size than chitosan, and can absorb into the bloodstream. Both are derived from chitin, which is found in the exoskeletons of crustaceans such as shrimp, lobster or crab.

Chitosan is an aminopolysaccharide that is chemically similar to cellulose. Chitosan oligosaccharides (CO) are manufactured from chitosan by an enzymatic process, resulting in a much smaller molecular size that is more easily absorbed by the body. Chitosan itself is more of a fiber and contributes to detoxification in the GI tract, whereas CO supports detoxification in blood and other tissues.\*

In a small clinical trial of people being treated for Borrelia and experiencing Herxheimer's reactions, MicroChitosan™ improved Herxheimer's symptoms by the end of one week.\* In subjects with pain, 100% reported significant improvement (in half of these, the pain completely resolved), and of those with sleep disturbances, 75% reported sleeping more deeply and waking up more well rested.\*

The research on chitosan oligosaccharides is extensive, and shows it has great potential to benefit health. Chitosan oligosaccharides can promote the growth of friendly bifidobacteria and lactobacillus. Unlike fructooligosaccharides (FOS), which promote the growth of only three probiotic strains, chitosan oligosaccharide supports many bifidobacteria and lactobacillus species.

Chitosan oligosaccharide has been shown to protect the liver from damage by carbon tetrachloride in mice, and to protect against mercury toxicity.\* It can promote the activity of antioxidant enzymes and help prevent lipid peroxidation, helping to protect mice poisoned with dioxin. It has also shown potential to support microbial balancing and other immune functions.\*

Investigated and utilized for many years by Akira Matsunaga, M.D., Ph.D., chitosan itself is considered a superior health substance in Japan, because it has a broad effect on all of the body's systems. Dr. Matsunaga found that it strengthened those who were weak, made healthy patients healthier, and improved common daily complaints and the quality of life.\* He found that chitosan did not target only one organ, but effectively supported the functioning of all of the body's systems and organs.\*

Chitosan is also a lesser-known binding agent. It acts in a very similar manner to bile acid sequestrants to prevent the absorption of lipids by binding to bile salts, but more importantly with regards to detoxification, removing many toxins secreted in the bile. It has been shown to be an effective binder of endotoxin; ochratoxin, a mold toxin found on many foods; heavy metals including mercury; as well as polychlorinated biphenyls (PCBs), phthalates, and BPA.

Both chitosan and chitosan oligosaccharide are extremely safe. Even at a chitosan oligosaccharide intake of 2000 mg/kg in rats, which extrapolates to more than 135,000 mg per day for an average-weight adult human, researchers could not find a potential adverse effect or toxicity.

Supplement Facts		
Serving Size	3 Capsules	
Servings Per Container	20	
	Amount Per Serving	% Daily Value
Proprietary Blend		
Chitosan Oligosaccharide and Chitosan (shrimp, crab, lobster)	1.8 g	†
† Daily Value not established.		

Other ingredients: Hydroxypropyl methylcellulose, ascorbic acid, microcrystalline cellulose, L-leucine.

**Suggested Use:** As a dietary supplement, 1 to 3 capsules daily on an empty stomach, or as directed by a healthcare practitioner.

**WARNING:** Avoid this product if you are allergic to shellfish, pregnant or lactating. If used long-term, additional supplementation with fat soluble vitamins and essential fatty acids is recommended.

## References:

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