

Porphyra-Zyme™

Binds Heavy Metals

In 1980, Biotics Research Corporation began investigating the use and production of Spirulina plankton. A leading expert from the University of Texas provided insight into methods of production, as well as pure Spirulina cultures that were the starting culture for our research and production.

Production was halted when scientists at Biotics isolated what they considered the "active" principal of Spirulina, the porphyrin ring of chlorophyll. While many claims for the nutritional value of Spirulina have been made, the consensus was the most significant value in Spirulina was chlorophyll. However, the chlorophyll content in Spirulina is low (typically less than 1%).

Porphyra-Zyme™ — A Concentrated Porphyrin Product

Unlike traditional chlorophyll products, **Porphyra-Zyme™** is a concentrated porphyrin supplement. By increasing the porphyrin content, the heavy metal binding capability is also increased, providing clinicians with a natural, effective "chelating" tool.

Porphyrins have the ability to bind divalent metal ions due to the nitrogen atoms of the tetrapyrrole nucleus. The central ion in chlorophyll is magnesium, which is freed from chlorophyll under acidic conditions, permitting other metals to bind in its place. Toxic metals, such as mercury, lead and arsenic, are complexed first. Then excess amounts of other divalent metals, such as calcium, can be complexed by porphyrins.

Investigational Data on Porphyra-Zyme™

Scientists at Biotics Research Corporation studied the ability of **Porphyra-Zyme™** to bind heavy metals *in vitro*. **Porphyra-Zyme™** was dialyzed against aqueous solutions of heavy metal ions. Afterward, the concentration of heavy metal ion remaining in the dialysis medium was determined. As can be seen by the Investigational Data chart, **Porphyra-Zyme™** proved to be very effective in binding heavy metals.



Using dialysis, the following exchange range for toxic metals was established:

Initial Concentration	After Dialysis against a solution of Porphyra-Zyme™	Amount Complexed	Percent
Lead 20 ppm	4.8 ppm	15.2 ppm	76%
Mercury 10 ppm	0.8 ppm	9.2 ppm	95%
Cobalt 30 ppm	3.4 ppm	26.6 ppm	88%
Cadmium 15 ppm	3.6 ppm	11.4 ppm	76%
Arsenic 10 ppm	1.4 ppm	8.6 ppm	86%
Aluminium 20 ppm	7.0 ppm	13.0 ppm	65%
Nickel 10 ppm	3.3 ppm	6.7 ppm	76%

Measurements were made using atomic absorption techniques (flame, furnace and hydride methods), using a Perkin-Elmer 603 spectrophotometer.

Supplement Facts

Serving Size: 1 Tablet

	Amount Per Serving	% Daily Value
Vitamin C (as ascorbic acid)	120 mg	133%
Proprietary Blend	210 mg	
Spinach Concentrate (Spinacea oleracea) (leaf & stem)		*
Mulberry (Morus alba) (leaf) (extract)		*
Organic Beet Concentrate (Beta vulgaris) (leaf)		*
Vegetable Culture Concentrate (from non-soy legumes)		*

* Daily Value not established

Other Ingredients: Stearic acid (vegetable source), magnesium stearate (vegetable source), modified cellulose gum and food glaze.

Porphyra-Zyme™ supplies botanical extracts and concentrates providing naturally occurring Chlorophyllin, Galactoglycerides, Chlorophyll (a and b), Phospholipids, Carotenoids, Sulfolipids, Plastoquinones (a, b, and c), Menadione, Cytochrome B6 and F, Plastocyanine, Ferridoxin and trace minerals.

This product is gluten and dairy free.

RECOMMENDATION: One (1) tablet three (3) times each day as a dietary supplement or as otherwise directed by a healthcare professional.

KEEP OUT OF REACH OF CHILDREN

Store in a cool, dry area.
Sealed with an imprinted safety seal for your protection.



(800) 231-5777

5245 Business Park Drive • Rosenberg, TX 77469
biotics@bioticsresearch.com • www.bioticsresearch.com