

Clinical Trial Indicates Sun Protection from BioAstin Supplement

Summary:

A preliminary clinical trial of 25 individuals indicated Cyanotech's BioAstin supplement showed a statistically significant increase in the amount of irradiation needed to cause reddening of the skin.

BioAstin Supplement Details:

BioAstin® consists of an oil-based extract of the carotenoid of the microalgae *Haematococcus pluvialis*. This microalgae is cultured and dried by Cyanotech Corporation at its Kona, Hawaii production facility. The extraction process uses CO₂ without the use of hydrocarbon solvents, to yield high concentrations of astaxanthin, the active component. BioAstin is allowed by the FDA to be sold as nutritional supplement and is currently available in 60 count bottles containing 2-mg astaxanthin per BSE-free gelatin capsule. The product is completely natural and without any genetic manipulation (GMO-free).

Astaxanthin is responsible for most of the red coloration in aquatic animals like salmon, trout, shrimp, and lobsters. Astaxanthin also accounts for the pink coloration in flamingoes. Astaxanthin is similar in structure to beta-carotene, the carotenoid responsible for the color of carrots, oranges, and papayas. However, slight differences in its structure make it a much stronger antioxidant (10 times stronger than beta-carotene and up to 500 times stronger than vitamin E.) Unlike beta-carotene, astaxanthin is readily transferred across the so-called blood-brain barrier. This means astaxanthin can function as an antioxidant for the brain and eyes. A European clinical trial indicated astaxanthin can increase endurance in humans. Cyanotech has been given notification of allowance by the United States Patent Office (USPTO) on its patented use of astaxanthin for the treatment of carpal tunnel syndrome.

The sun protection study was initiated after numerous reports from users that they did not burn as readily after using BioAstin.

Trial details

The trial was performed by a consumer product testing laboratory in the United States.

Number of subjects: 21

Skin types: sensitive (easily sunburned) to normal (burns moderately sunburn). Excluded were people with skin disease, current suntan or burn, or uneven skin tone.

Trial design: The clinicians determined the sensitivity to burning (erythema) for each subject. This threshold was based on reddening of the skin after exposure to a xenon arc solar simulator that provides a spectral range of UV light comparable to that of sunlight.

The threshold was quantified in terms of elapsed exposure time to produce erythema. Subjects then consumed 4 mg BioAstin astaxanthin for two weeks and then were again measured for the minimum threshold to burning. For each subject this number was compared to their base-line data.

Results: results ranged from over 50% more energy needed to burn the skin on some subjects to little or no effect on some subjects. The average of all subjects was approximately 20% more energy, a statistically significant improvement.

Comments from testing company report:

“Based on the results of 21 subjects, BioAstin significantly altered the minimal erythema dose (MED) following daily ingestion for a period of two weeks. It took significantly more energy (measured in milli-joules) to cause erythema.”

For additional information:

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<http://www.cyanotech.com>

<http://www.bioastin.com>