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Research article

Pharmacology

Astashine Gummies: An Excellent Choice to boost Immune System in patients with allergies and asthma.

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ABSTRACT

Astaxanthin is a naturally occurring carotenoid which is derived from the microalgae *Haematococcus pluvialis* being the most powerful antioxidant known to science, it also has potent anti-inflammatory properties. Natural astaxanthin's distinct advantage in comparison to other antioxidants is its ability to span the entire lipid bilayer of the cell membrane, thus providing superior protection from the inside out. Natural astaxanthin has a strong ability to both balance and strengthen the immune system.

Keywords: Astashine Gummies, asthma

INTRODUCTION

The immune system is made up of a network of cells, tissues and organs that work together to protect the body against infectious microorganisms, such as certain bacteria and viruses; while also working to destroy any infectious microorganisms that manage to invade the body. Phagocytes are cells that destroy invading organisms, while lymphocytes are cells that allow the body to remember and recognize previous invaders and help the body destroy them – the innate immune response. Natural astaxanthin has shown positive effects and substantial benefit in enhancing the capacity of both lymphocytes and phagocytes.

Inflammation is the body's biological response to harmful stimuli. Acute inflammation is the initial response to such stimuli and in most cases it can be visually identified. The other form of inflammation is "chronic inflammation";

it is often called the silent killer. Unlike the acute type chronic inflammation builds up in the body as a result of the immune system constantly responding to threats.

Chronic inflammation is one of the major causes of accelerated aging and many of its associated diseases such as chronic heart disease, arthritis or allergies. It is characterized by the release of cytokines and pro-inflammatory markers such as tumor necrosis factor- α (TNF- α), C-reactive protein (CRP) and others. Luckily, we can test for inflammation by measuring these different biological markers in the blood which will give an indication of inflammation levels.

Natural astaxanthin has been shown to help significantly decrease the expression of pro-inflammatory markers and mediators, thus providing potent anti-inflammatory protection in the body. Several studies have been conducted to understand the anti-inflammatory mechanism of astaxanthin and it is thought to be related to the inhibition of the Nf-kB inflammatory pathway (5).

Composition of Astashine Gummies

NUTRITIONAL FACTS		
Serving Size: 1 Gummy (3.5g)	Serving per pack: 30	
	Amount per Serving	
Energy	12.556	Kcal
Total Fat	<0.1	g
-Trans fat	<0.1	g
-Saturated fat	0	g
Total Carbohydrates	2.814	g
-Sugar (as polyols)	2.814	g
-Dietary fiber	0	g
Protein	<0.1	g
Salt	<0.001	mg
Cholesterol	0	mg
Astaxanthin	2	mg
Vitamin D	400	IU
Vitamin E (As Alpha Tocopherol)	10	mg
Percent Daily Value are Based on a 2000 calories diet.		
* Daily value not established.		

Nano Micro Emulsion Technology & Cold Water Soluble Vitamin E

Asthashine gummies supports

Improved bioavailability
Enhanced solubility
Increased stability
More efficacy

Nano and micro emulsions are both types of colloidal dispersions in which small droplets of one liquid are dispersed throughout another liquid. The droplets in nanoemulsions are typically between 20-200 nm in diameter, while those in microemulsions are larger, typically between 100-500 nm. Both types of emulsions offer several benefits, including: *Asthashine gummies benefits in*

Brain Health
Skin health & UV Protection
Eye Health
Cardiovascular Health
Immune System
Anti-Aging & cellular Health
Male Fertility
Bone, Joint, Tendon and Muscle
Athletic Performance & Energy Levels

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NEUROVASCULAR PROTECTION: Decrease the oxidation of Red blood cells, decreases the incidence of ischemic stroke, and improves memory and learning.

SKIN AGING DEFENCE: Prevents UV induces wrinkle formation, skin sagging, and age spots; improves skin elasticity and skin dryness.

LIVER HEALTH and METABOLIC SYNDROME: Inhibits progression of fatty liver disease, increases fat burning, and decreases inflammatory markers.

LOWERNING GASTRIC INFLAMMATION: Reduces Helicobacter pylori inflammation, gastric ulceration, indigestion, acid reflux, heart burn and stomach pain.

MUSCLE RESILIENCE: Enhances power output, endurance, and recovery after exercise; prevents muscle damage and muscle atrophy.

EYE FATIGUE RELIEVE: Reduces eye fatigue in subjects suffering from visual display syndrome.

IMMUNE SYSTEM BOOSTER: Reduces DNA damage in immune cells and enhances the immune response.

CARDIOVASCULARHEALTH: Fights atherosclerosis by decreasing blood pressure, lipid deposits, lipid per oxidation and vascular inflammation.

ANTI-DIABETES: improves pancreatic function, insulin resistance, and insulin sensitivity.

KIDNEY PROTECTION: Reduces glucose toxicity and kidney inflammation.

FERTILITY: Improves sperm parameters and fertility.

CAPILLARY CIRCULATION: improves blood flow and capillary integrity; reduces blood cell oxidation and the risk of thrombosis.

Mechanism of Action

Astaxanthin's outstanding properties as an anti-inflammatory also play a major role in its ability to enhance immune function. Due to the multitude of ways in which Astaxanthin combats inflammation, it is a very special anti-inflammatory indeed. Both in-vitro and in-vivo research has been done to uncover its mechanism of action as an anti-inflammatory. This mechanism has been further demonstrated in several double blind, placebo controlled human clinical trials on various inflammatory conditions.

Astaxanthin works to suppress different inflammatory mediators. Among these mediators are tumor necrosis factor alpha (TNF-a), prostaglandin E-2 (PGE-2), interleukin 1B (IL-1b) and nitric oxide (NO). In one experiment done with mice and also in-vitro, Astaxanthin was shown to suppress TNF-a, PGE-2, IL-1b, NO as well as the Cox-2 enzyme and nuclear factor kappa-B.

Another study done the same year was led by a researcher from Japan's Hokkaido University Graduate School of Medicine. Here, the researchers found similar results: Astaxanthin was shown in-vitro to decrease the production of NO, PGE-2 and TNF-a. This study also looked at Astaxanthin's anti-inflammatory effect in the eyes of rats. The researchers induced uveitis (inflammation of the inner eye including the iris) and found that Astaxanthin had a "dose dependent ocular anti-inflammatory effect, by the suppression of NO, PGE-2 and TNF-a production, through directly blocking nitric oxide synthase enzyme activity".

CLINICAL STUDY REPORTS OF ASTAXANTHIN IN ASTASHINE GUMMIES

ASTASHINE Gummies enhances Immune Response

The immune system is made up of a network of cells, tissues and organs thatwork together to protect the body against

infectious microorganisms, such as certain bacteria and viruses; whilst also working to destroy any infectious microorganisms that manage to invade the body.

Phagocytes are cells that destroy invading organisms, while lymphocytes are cells that allow the body to remember and recognize previous invaders and help the body destroy them – the innate immune response.

Natural astaxanthin in ASTASHINE Gummies have shown positive effects and substantial benefit in enhancing the

capacity of both lymphocytes and phagocytes. The first human study to show this effect was published by Park *et al.* in 2010. In this double-blind, placebo-controlled study, 42 individuals received 0 or 8 mg/d astaxanthin (AX) vs placebo. Lymphocyte count was significantly increased for the AX group. In addition, those receiving AX demonstrated a significant increase in the levels of B and T cells (figure 2).

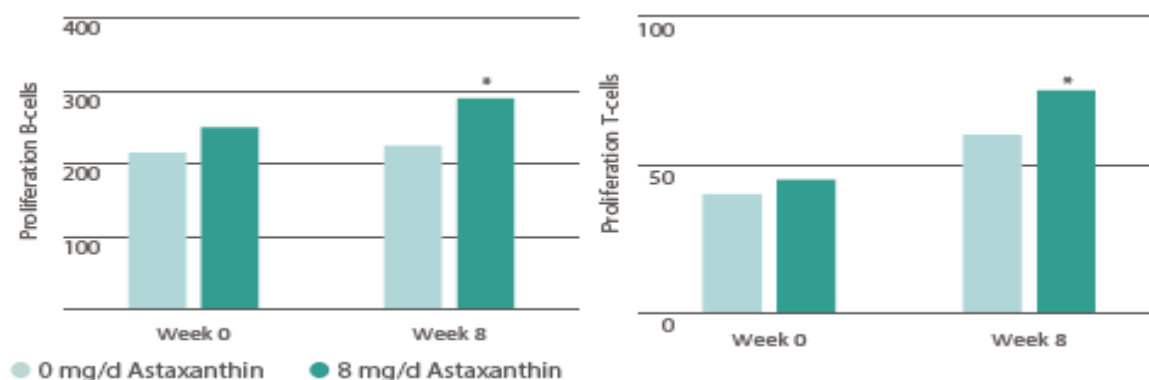


Fig 2: The effect of astaxanthin on immune response was measured in a double blind, randomized study involving 42 subjects. B-cells and T-cells were exposed to high concentrations of mitogens and their capacity to proliferate was measured. * $p < 0.05$ compared with control.

Research has shown that natural astaxanthin is also a potent anti-inflammatory and is particularly effective against chronic inflammation. To test its efficacy, scientists have examined the levels of Pro-inflammatory markers with and without the presence of astaxanthin. In a 2003 model study, Seon *et al.* found that astaxanthin significantly decreased the expression of different pro-inflammatory markers in Lipopolysaccharide-induced inflammation (LPS) (Figure 3).

LPS=Lipopolysaccharide AX=Astaxanthin

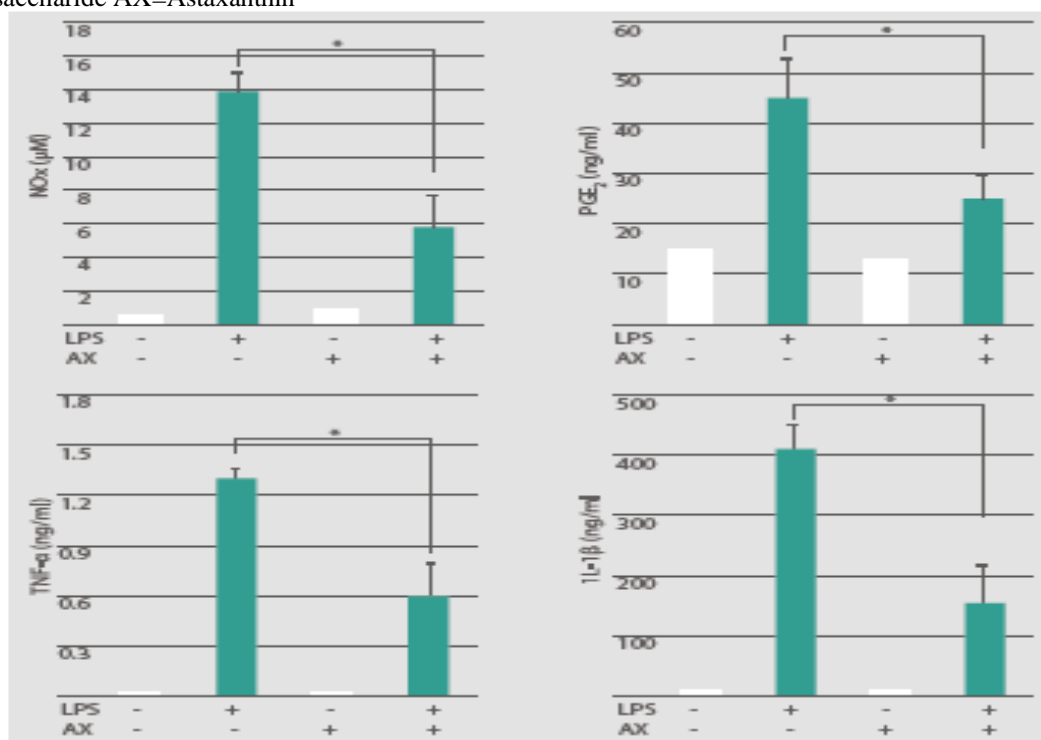


Fig 3: LPS-induced inflammation showing significant decrease in plasma levels of pro-inflammatory markers NO, PGE₂, TNF-α, and IL-1β.

In another randomized, double-blind placebo-controlled study; Park *et al.* (2010) examined 42 subjects for the pro-inflammatory marker CRP. The astaxanthin group supplemented with 2mg/d for 8 weeks showed that the levels of CRP were significantly reduced.

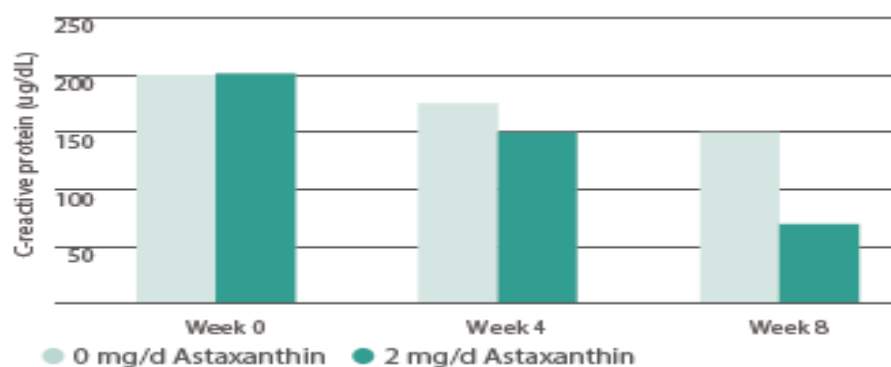


Fig 4: 8 weeks of supplementation with 2mg/d natural astaxanthin significantly reduced the expression of the pro-inflammatory marker C-reactive protein(CRP).

Safety of astashine gummies

Astaxanthin has demonstrated safety in numerous human clinical trials. In one open-label clinical study on subjects with metabolic syndrome (n=17). Astaxanthin (16 mg/day, for three months) significantly raised blood bilirubin($p \leq 0.05$), potassium ($p \leq 0.05$), and creatine kinase ($p \leq 0.01$), although all three values remained within normal range. Also, astaxanthin significantly lowered the liver enzyme gamma-glutamyltranspeptidase (GGTP; $p \leq 0.05$). Since the researchers noted this enzyme was abnormally elevated in 11 of the 17 subjects at baseline, this astaxanthin effect may have been beneficial. Animal experiments have investigated astaxanthin at levels well over 120 mg/day in human equivalents, without causing apparent harm. Hoffman-La Roche confirmed its safety with extensive tests, including acute toxicity, mutagenicity, teratogenicity, embryotoxicity, and reproductive toxicity.

Supplement Facts

Presentation: Gummies

Usage: As a food supplement combination of antioxidants to improve health and vitality.

Contra-indications: Product is contra-indicated in persons with Known hypersensitivity to any component of the product hypersensitivity to any component of the product.

Recommended usage: *Adults:* two Gummies per day along with food.

“Do not exceed the recommended daily dose”

Administration: Taken by oral route at anytime with food.

Precautions: Food Supplements must not be used as a substitute for a varied and balanced diet and a healthy

lifestyle. This Product is not intended to diagnose, treat, cure or prevent any diseases.

Warnings: If you are taking any prescribed medication or has any medical conditions or have any medical conditions (seizures) under age group 17 year always consults doctor or healthcare practitioner before taking supplements.

Side Effects: Mild side effects like nausea, headache and vomiting in some individuals have been reported.

Storage: Store in a cool, dry and dark place.

Keep out of reach of children.

SUMMARY & CONCLUSION

Studies demonstrate that astaxanthin in ASTASHINE Gummies helps to balance the immune system by stimulating its infection, while also helping suppress the overactive immune responses that create needless inflammation.⁶

Astaxanthin increases the numbers and activity of white blood cells called lymphocytes and natural killer cells that are responsible for creating the body's innate immune response to invaders.⁷⁻⁹

Astaxanthin has similar immune-boosting effects in humans, improving the ability of protective white blood cells to surround and destroy infecting organisms, especially fungi such as *Candida albicans*.¹⁰ Astaxanthin also protects human lymphocytes and neutrophils against the oxidant stresses imposed by the actions of certain white blood cells without reducing the killing effects of white blood cells themselves.¹¹ Human studies reveal astaxanthin's beneficial actions on immune system in patients with allergies and asthma. When astaxanthin was given to asthmatic patients, it suppressed reactive cell activation as well as or better than the antihistamine drugs.¹²

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