



# Natural Astaxanthin

One of Nature's Powerful Antioxidants



**6,000 times stronger than vitamin C**  
**800 times stronger than CoQ10**  
**550 times stronger than Vitamin E**  
**550 times stronger than green tea catechins**  
**75 times stronger than alpha lipoic acid**  
**40 times stronger than beta-carotene**  
**17 times more potent than grape seed extracts**[1]  
**Generally Recognized as Safe (GRAS) by FDA**[2][3]



## Potent Skin Protection from the Inside Out

Recent studies show that astaxanthin can rejuvenate skin from within [4][5][6]. It has the ability to scavenge skin-damaging free radicals [4][7][8]. Astaxanthin is widely distributed through most organs in the body, and it also accumulates in the skin, where it makes its way into all skin layers [9] [10]. This can provide potent protection against ultraviolet radiation [4]. Skin cells that are exposed to ultraviolet light produce bursts of free radicals that trigger aging effects such as skin sagging and wrinkles [4][11]. When astaxanthin is applied to skin cells in culture, it prevents the ultraviolet-induced destructive effects, suggesting that it significantly prevent ultraviolet-induced skin aging [4][11][12].

## Boosting Immune Function

Studies demonstrate that astaxanthin helps balance the immune system by stimulating cellular immunity while also helping suppress the overactive immune responses [13]. 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 [14][15][16].

## Slowing Brain Aging

Unlike many other antioxidant molecules, astaxanthin can cross the blood-brain barrier, allowing it to saturate and protect brain tissue [17]. These features have led experts to label astaxanthin a "natural brain food" [17]. A human study has showed that astaxanthin may improve cognitive health scores and learning scores in healthy middle-aged and elderly subjects with age-related forgetfulness [18][19].

## Prevent Massive Body Weight Gain

Astaxanthin supplementation also prevents massive body weight gain in animals fed high-fat or high-fructose diets [20][21]. In overweight and obese humans, astaxanthin suppresses lipid peroxidation and stimulates healthy natural antioxidant defenses in the body [22]. Lab studies reveal that astaxanthin improves metabolism by activating the post-receptor insulin signaling and by reducing oxidative stress, lipid accumulation and proinflammatory cytokines in obese animals [23-26]. In addition, astaxanthin preserved the ability of the pancreas to secrete insulin [23].

## Protecting Cardiovascular Health

Astaxanthin can modulate the oxidative condition and may improve vascular histology and endothelial function in rats. In humans and animals, astaxanthin helps to normalize lipid profiles while boosting beneficial HDL-cholesterol [30][31]. Astaxanthin also improves the stability of blood vessel structure by decreasing macrophage infiltration and apoptosis [32]. In the heart muscle itself, astaxanthin boosts mitochondrial energy delivery, which helps the heart muscle contract more powerfully and efficiently [33].

## Important Promoter of Eye Health

In laboratory studies, astaxanthin supplementation protects retinal cells against oxidative stress and significantly reduces the area of destructive new blood vessel growth on retinas [34] [35].

## Krill Oil VS Natural Astaxanthin

Many natural sources such as krill and Haematococcus pluvialis contain astaxanthin, but its concentration in Haematococcus pluvialis is much higher than other sources. The following sources can be found in nature with the approximate astaxanthin concentrations [36][37] :

Source	Astaxanthin Concentration (ppm)
Salmonids	~ 5
Plankton	~ 60
Krill	~ 120
Arctic shrimp (P borealis)	~ 1,200
Phaffia yeast	~ 10,000
Haematococcus pluvialis	~ 40,000

## Why Choose Natural Astaxanthin from Algae?

Synthetic astaxanthin and natural astaxanthin from Haematococcus pluvialis microalgae are completely different, not only in antioxidant potential, but the molecules are also different in three stereoisomers. One comparison study showed that astaxanthin from Haematococcus pluvialis microalgae is approximately 20 to 50 times more active in singlet oxygen quenching and free radical elimination than synthetic astaxanthin [38]. Furthermore, all the human clinical research showing a wide variety of health benefits has been performed exclusively on natural astaxanthin from algae.

## References

- Nishida Y et al. Carotenoid Science. 2007; 11: 16-20.
- Astaxanthin wins full GRAS status. Nutraingredients-usa.com. Retrieved on 2013-04-25.
- Algatechnologies gets GRAS for AstaPure astaxanthin. Foodnavigator-usa.com. Retrieved on 2013-04-25.
- Lyons NM, O'Brien NM. J Dermatol Sci. 2002 Oct; 30 (1): 73-84.
- Terazawa S et al. Exp Dermatol. 2012 Jul; 21 Suppl 1: 11-7.
- Anunciato TP, da Rocha Filho PA. J Cosmet Dermatol. 2012 Mar; 11 (1): 51-4.
- Kidd P. Altern Med Rev. 2011 Dec; 16 (4): 355-64.
- Martínez A et al. J Phys Chem A. 2008 Sep 25; 112 (38): 9037-42.
- Petri D, Lundebye AK. Comp Biochem Physiol C Toxicol Pharmacol. 2007 Mar; 145 (2): 202-9.
- Tominaga K et al. Acta Biochim Pol. 2012; 59 (1): 43-7.
- Suganuma K et al. J Dermatol Sci. 2010 May; 58 (2): 136-42.
- Camera E et al. Exp Dermatol. 2009 Mar; 18 (3): 222-31.
- Chew BP, Park JS. J Nutr. 2004 Jan; 134 (1): 257S-61S.
- Nakao R et al. Anticancer Res. 2010 Jun; 30 (6): 2171-5.
- Chew BP et al. Vet Immunol Immunopathol. 2011 Apr 15; 140 (3-4): 199-206.
- Park JS et al. 2011 Dec 15; 144 (3-4): 455-61.
- Liu X, Osawa T. Forum Nutr. 2009; 61: 129-35.
- Satoh A et al. J Clin Biochem Nutr. 2009 May; 44 (3): 280-4.
- Katagiri M et al. J Clin Biochem Nutr. 2012 Sep; 51 (2): 102-7.
- Arunkumar E et al. Food Funct. 2012 Feb; 3 (2): 120-6.
- Ikeuchi M et al. Biosci Biotechnol Biochem. 2007 Apr; 71 (4): 893-9.
- Choi HD et al. Phytother Res. 2011 Dec; 25 (12): 1813-8.
- Uchiyama K et al. Redox Rep. 2002; 7 (5): 290-3.
- Naito Y et al. Biofactors. 2004; 20 (1): 49-59.
- McCarty MF. Med Hypotheses. 2011 Oct; 77 (4): 550-6.
- Arunkumar E et al. Food Funct. 2012 Feb; 3 (2): 120-6.
- Hussein G et al. Biol Pharm Bull. 2005 Jan; 28 (1): 47-52.
- Sasaki Y et al. Nutr Res. 2011 Oct; 31 (10): 784-9.
- Hussein G et al. Biol Pharm Bull. 2006 Apr; 29 (4): 684-8.
- Yoshida H et al. Atherosclerosis. 2010 Apr; 209 (2): 520-3.
- Yang Y et al. J Nutr. 2011 Sep; 141 (9): 1611-7.
- Li W et al. J Mol Cell Cardiol. 2004 Nov; 37 (5): 969-78.
- Nakao R et al. Anticancer Res. 2010 Jul; 30 (7): 2721-5.
- Izumi-Nagai K et al. Invest Ophthalmol Vis Sci. 2008 Apr; 49 (4): 1679-85.
- Nakajima Y et al. J Pharm Pharmacol. 2008 Oct; 60 (10): 1365-74.
- Margalith PZ et al. Appl Microbiol Biotechnol. 1999 Apr; 51 (4): 431-8.
- Astaxanthin – a super natural antioxidant. algatech.com
- Bob C et al. Nutrafoods. 2013 Dec; 12(4): 145-52.

This product is not registered under the Pharmacy and Poisons Ordinance or the Chinese Medicine Ordinance. Any claim made for it has not been subject to evaluation for such registration. This product is not intended to diagnose, treat or prevent any disease.