Natural astaxanthin possesses potent anti-inflammatory properties

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 since there are very few, if any, symptoms of this type of inflammation. 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 a 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).

What is Natural Astaxanthin?

It is a naturally occurring carotenoid which is derived from the microalgae Haematococcus pluvialis. As well as 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.

Research & Key Findings

Research has shown that natural astaxanthin is 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 1).

LPS=Lipopolysaccharide   AX=Astaxanthin

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 (figure 2).
Enhance Immune Response with Natural Astaxanthin

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; 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 has 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 3).

References & Selected Publications