

InterClinical Laboratories Pty Ltd

Hair Tissue and Mineral Analysis | Nutritional, Herbal and Natural Medicine |
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Welcome to InterClinical Laboratories March eNews!

Single - cell Superfood

Microalgae is a nutrient-dense functional food and medicine utilized amongst Aztec, African and Asian people for thousands of years. *Dunaliella salina* may be the most nutrient dense food on earth and comparably outshines other edible algae such as spirulina and chlorella. This is primarily due to its extremely high concentration of mixed carotenoids, believed to impart a pink colouring which is seen in salt lakes where the algae flourishes. *Dunaliella salina* also contains a variety of health-enhancing vitamins, minerals, essential fatty acids, amino acids, phytonutrients and chlorophyll. This superfood

provides a holistic mix of nutrients developed over years of evolution.

In this month's eNews we present a study conducted by Berlin University, Germany, which explores the influence of dietary carotenoids on radical scavenging capacity of the skin and skin lipids.



Clinical Updates

Influence of Dietary Carotenoids on Radical Scavenging Capacity of the Skin and Skin Lipids

Foods rich in carotenoids are well known for several health benefits including photoprotection against UV radiation, increasing micro-circulation, as well as reducing risk of premature skin ageing. Antioxidants prevent cell damage such as DNA oxidation which is correlated with lipid peroxidation.

It was investigated whether orally administered carotenoids raise the radical scavenging activity and radical protection of the skin. A double blind placebo controlled study was performed with 24 healthy volunteers; their diet was supplemented with carotenoid-rich capsule or a placebo, for a period of 8 weeks. The supplement capsule contained a curly kale extract, sea-buckthorn oil and olive oil. It consisted of 2200µg lutein, 1000µg beta carotene, 50µg alpha carotene, 400µg lycopene, 700µg zeaxanthin, and 100µg cryptoxanthin. As a control, a placebo capsule containing no antioxidants was given. Raman resonance spectroscopy was used to analyse the uptake of carotenoids in the skin. Antioxidant capacity was then determined by in vivo electron paramagnetic resonance spectroscopy using the test radical TEMPO.

The results showed a slow but significant and effective enhancement in the cutaneous carotenoids in the verum group. This increase in carotenoids improves the radical scavenging activity of the skin and provides protection against stress induced radical formation (e.g. by environmental factors). The findings indicate that a supplementation of dietary products containing carotenoids in physiological concentrations can protect skin against reactive oxygen species, as well as reducing the risk of premature skin ageing and other radical-associated skin diseases.

Reference:

Meinke, M, Friedrich, A, Tscherch, K, Haag, S, Darvin, M, Vollert, H, Groth, N, Lademann, J, & Rohn, S 2013, 'Research paper: Influence of dietary carotenoids on radical scavenging capacity of the skin and skin lipids', *European Journal Of Pharmaceutics And Biopharmaceutics*, 84, Biological Barriers, pp. 365-373.

DOI: 10.1016/j.ejpb.2012.11.012

Comment

Dunaliella salina is one of the richest natural sources of mixed dietary carotenoid antioxidants; beta-carotene, alpha carotene, lutein, zeaxanthin and cryptoxanthin. Compared to other cell foods, such as spirulina and chlorella, it has a higher content of bioavailable nutrients.

Algotene™ is made from this pure edible microalgae. *Dunaliella salina* provides many of the nutrients to help support healthy skin and eyes, healthy immune system, natural detoxification as well as protection against cellular damage.



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