

NatAxtin® Astaxanthin

We invite you to have a look at our Natural Astaxanthin line of products called NatAxtin®. Find out more about the power of Astaxanthin in different applications!

We believe in natural algae-based astaxanthin, we believe in our production partner Atacama Bio Natural



SCAN ME



LUS

HEALTH INGREDIENTS

NatAxtin
Made as nature intended





LUS HEALTH INGREDIENTS

Always Vegan, Natural & No-nonsense

NatAxtin® Astaxanthin

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HEALTH INGREDIENTS



ASTAXANTHIN HEALTH AREAS

OUR FOUNDATION

ies at the very heart of each of our ingredients. How they are taken up, their efficacy & safety, but lets not forget consumer opinion and understanding of et. We have a large set of original studies available for our clients. Currently al EU health claims are allowed and the studies discussed in this document inspiration. Astaxanthin is allowed in a total daily dosage of 8mg.

Bioavailability

- Natural vs Synthetic

Skin health

- Wrinkles
- Sunburn

Eye Health

- Protection for screen workers
- Night blindness

Healthy Aging

- Sarcopenia & Cognition

Sports

- Power
- Recovery

Inflammation

- Carpal tunnel syndrome
- Rheumatoid Arthritis

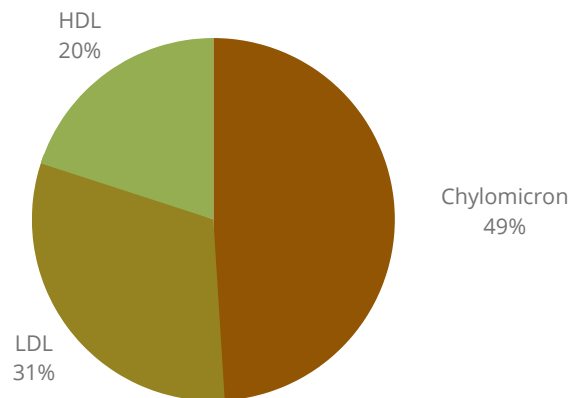
BIOAVAILABILITY

Astaxanthin is a keto-carotenoid that, just like other carotenoids and fatty components follows the route of fatty acid take up, i.e. it enters the blood as lipoproteins called chylomicrons. These chylomicrons are taken up by the liver which will in turn make lipoproteins (VLDL filled with energy dense fats AND astaxanthin. Within 6 hours a single dose of astaxanthin will have spread through the different lipoproteins.

level of Asta in Blood



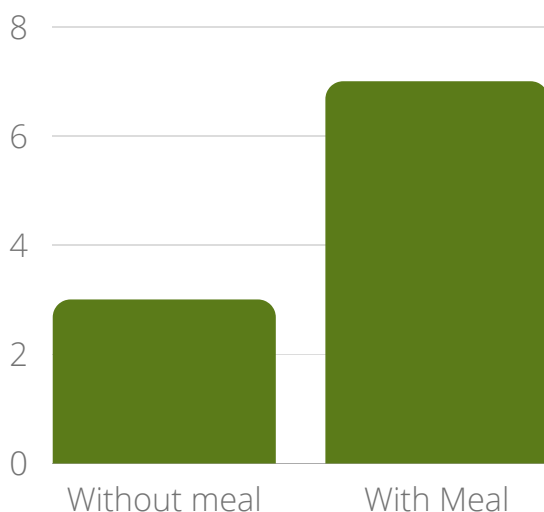
Within 6 hours after intake of a single dose the astaxanthin concentration in the blood reaches its maximum



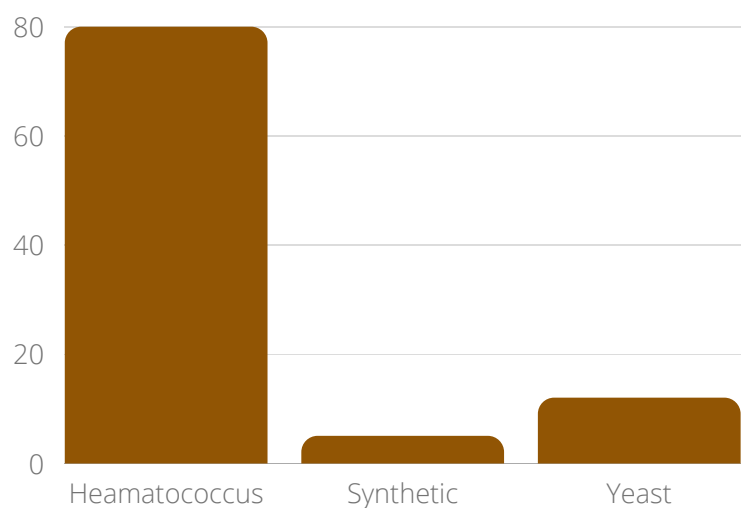
Astaxanthin in the different lipoproteins after 6 hours

Not surprisingly efficient uptake of astaxanthin is enhanced by a (fatty) meal, which almost doubles the uptake in our blood. Another factor that comes into play is the format in which the astaxanthin is in. Synthetic or yeast-based non-esterified forms of astaxanthin, as used in feed (and sometimes even in supplements!) only yield 5-10% of a taken dosage of astaxanthin in our blood.

Only natural Haematococcus leads to effective concentrations of Astaxanthin in the blood!



Relative blood levels of astaxanthin, after taking the same amount with or Without a meal



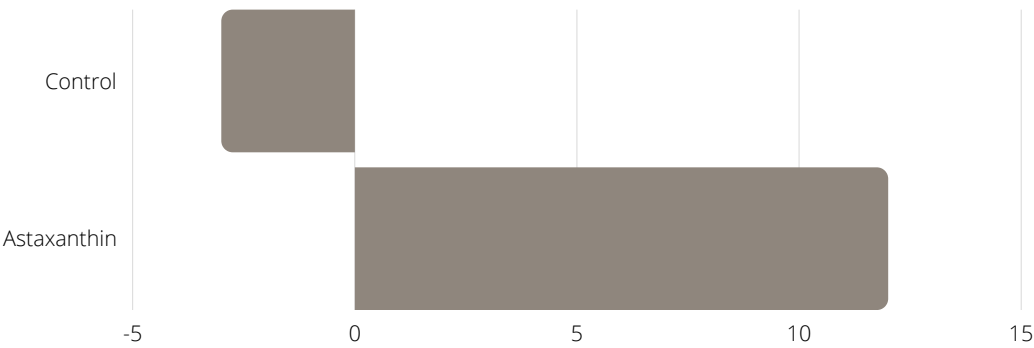
The raw material containing the astaxanthin determines for a large amount the uptake into the body



SKIN HEALTH



Our skin is our biggest organ. It protects us from outside influences and gives us the sense of touch. Keeping the skin healthy is important to make sure it can play the barrier role. An unhealthy skin is more susceptible for inflammation, redness, dryness and wrinkles. Studies have shown the positive effects of natural astaxanthin in the reduction of wrinkles, of holding moisture and of improving skin elasticity.



Skin elasticity after 12 weeks. 4mg of Natural Astaxanthin / day. Placebo = MCT oil. Change from baseline. RCT with 44 women, Yoon et al 2004

27%
of consumers self report
benefits on skin

Online consumer reviews on natural Astaxanthin show interesting results. Consumers self report skin improvements and mostly on the prevention of sun burn, as one reviewer describes:

"This is one of the best supplements I've ever used. It helps to prevent sunburn. I typically get a sunburn after 20 minutes in the sun. When I take this supplement, I've been outside for 5 hours straight in a hot sunny day and only get a little tan"

The market for nutricosmetics is growing rapidly at 11,5% CAGR between 2011-2020.

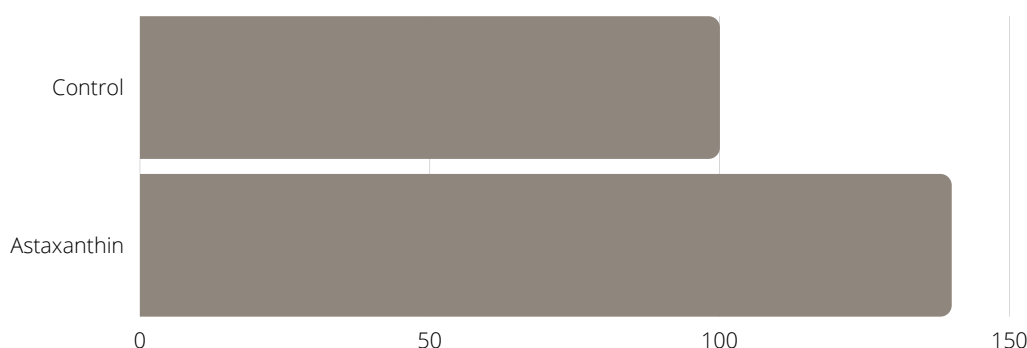
A major market focus is healthy (skin) aging and baby boomers are willing to spent substantial amounts to keep their skin youthful. In the nutricosmetics market collagen is king - why not combine it with Astaxanthin?





EYE HEALTH

Our eyes are bombarded with strains like pollution, UV light, Blue light and more, which can impact eye health and, in the long term, our vision. Already at a young age children are using screens and we don't stop using them until the very last moment. Studies show that natural Astaxanthin may help screen workers improve their accommodation amplitude, i.e to decreasing the chance of developing near vision.



Accommodation amplitude improvement after 4 weeks of 5mg natural Astaxanthin per day in Screen workers. , Nagaki et al 2002; Kono et al 2014

20%

of consumers self report benefits on eye health

Consumer reviews on the use of Astaxanthin in the area of eye health reveal benefits in line with the science. Both on general eye health and, interestingly, also night vision.

"My ophthalmologist was shocked that my right eye lens corrective number went from 2.50 to 1.00 & my left eye went from 2.75 to 0.75. She said "no one of 78 years old ever has their eyesight improve!"

Ginger

The eye health supplement market is probably one of the fastest growing segments around. Following the AREDS I and II studies, brands have launched globally.

The top selling brand on Amazon sells over 1,7M\$ a month ! There is room for your brand, get in touch to find out more !

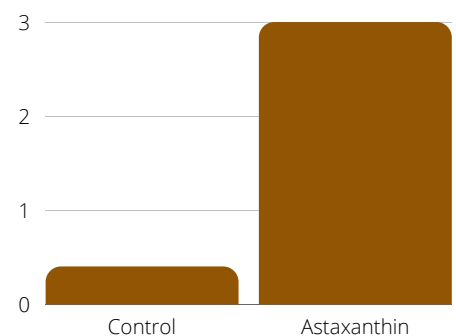
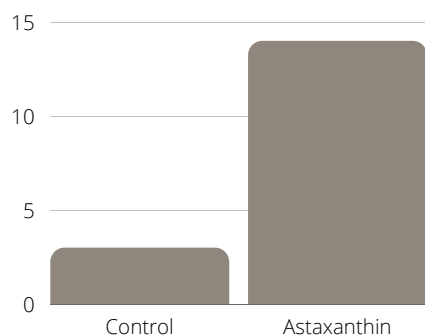




HEALTHY AGING

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An aging body comes with its problem; Muscle volume & strength declines, cognitive functions can be impaired and general metabolism & recovery are slower. Studies on Astaxanthin indicate that this powerful antioxidant may be involved in the processes that can slow down age-related complaints or even prevent them.



Maximum voluntary contraction (grey) and increase of muscle size (brown) in exercising elderly (65-82) on 12mg of Astaxanthin / day after an RCT of 4 months. Liu et al 2018

30%

**of consumers self report
benefits on aging**

Consumers have reviewed the use of Astaxanthin personally with interesting result on anti-aging, eye sight and lifting weights though this topic is underestimated!

"Three weeks later I noticed that I suddenly was able to lift about 30% more than I was ever able to lift before in the gym"

Terri

The healthy aging market has enormous potential when looking at the number of consumers in the 50+ age group, strangely enough not many brands have focussed on this category and the room position a product or brand in that area is wide open. Growth is anticipated to be around 6,6% year-over-year till 2025.

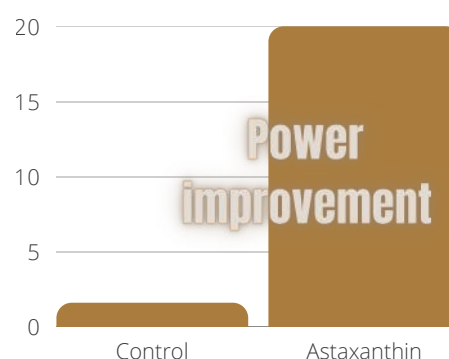
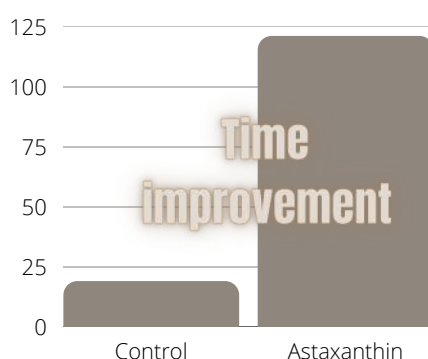
Astaxanthin can give that edge that your product needs to succeed!

6,6%
CAGR 2019-2025

SPORTS

NatAxtin
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We all love sports, don't we? Some rather watch it on TV, but the amount of gym memberships and the number of recreational runners has never been this high. Astaxanthin has shown some marvelous results on increasing power, speed and recovery in athletes. We have a full database on Asta & Sports, feel free to reach out!



Time improvement (s) - grey and increase of powder (W) - brown in trained cyclist on a 20 km time trial using 4 mg of Astaxanthin / day for 4 weeks. Earnest et al 2015

130%

of consumers self report benefits

13 % of all online reviewers on Amazon show benefits in the area of sports like strength improvement, faster recovery or decreased joint pain.

"...for joint pain, and overall recovery from working out it works great..."

RPL

Dominated by whey protein, the sports nutrition market has grown at enormous rates the last decade, now totaling an estimate 15,6 billion USD (2019) with an expected growth rate of 8,9% the coming years.

All major brands are struggling to add new functional benefits to their protein shake and Astaxanthin may just be the perfect fit!

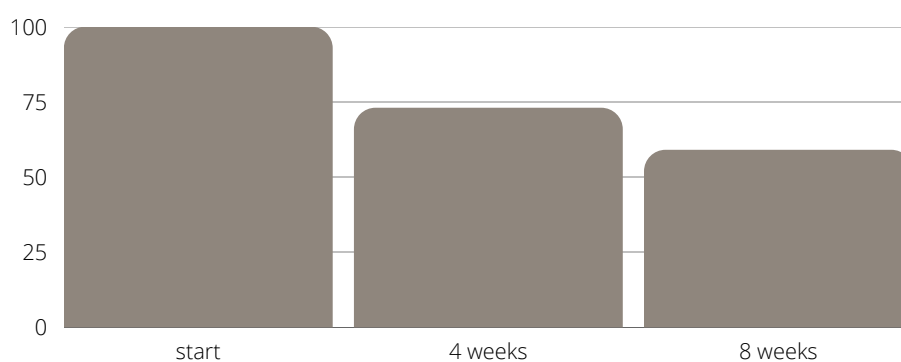
15,6B\$
value in 2019

INFLAMMATION

Nat Axtin
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Nearly all inflammation in our body goes hand-in-hand with the (over)production of reactive oxygen species (ROS) AKA free radicals.

As one of nature's strongest antioxidants, natural astaxanthin may help the body overcome (and prevent) inflammation and help with conditions like tunnel carpal syndrome.



Improvement in pain score for individuals with carpal tunnel syndrome when using 12 mg of astaxanthin for 8 weeks compared to control (100%)
Nir et al 2002.

34%

**of consumers self report
reduction of inflammation**

Reduction of inflammation is one of the most common self-reported benefits on natural Astaxanthin. Specifically, consumer report reduction in joint pain and general inflammation.

"I lift regularly and my joints feel better than they've ever felt. My knees and elbow joints were hurting before I started taking this, however now the pain is gone"

Eli

Inflammation is wide spread in the western world. With joint pain probably the number one inflammation-based condition. The amount of people with Rheumatoid Arthritis is growing globally, especially now the baby boomers are getting older.

These people need (natural) help, there is only so much corticosteroids you can handle.



63M
people suffer from arthritis



NatAxtin® product line

AN COMPREHENSIVE PORTFOLIO

The NatAxtin® product line consists of a range of products aimed at delivering natural astaxanthin to any application. Powders, Oleoresin and even Vegan soft gels are part of the extensive portfolio.

Product Tree

NatAxtin® PureMass & PureMass ME

NatAxtin® Oleoresin 5 & 10%

NatAxtin® Oleoresin ME

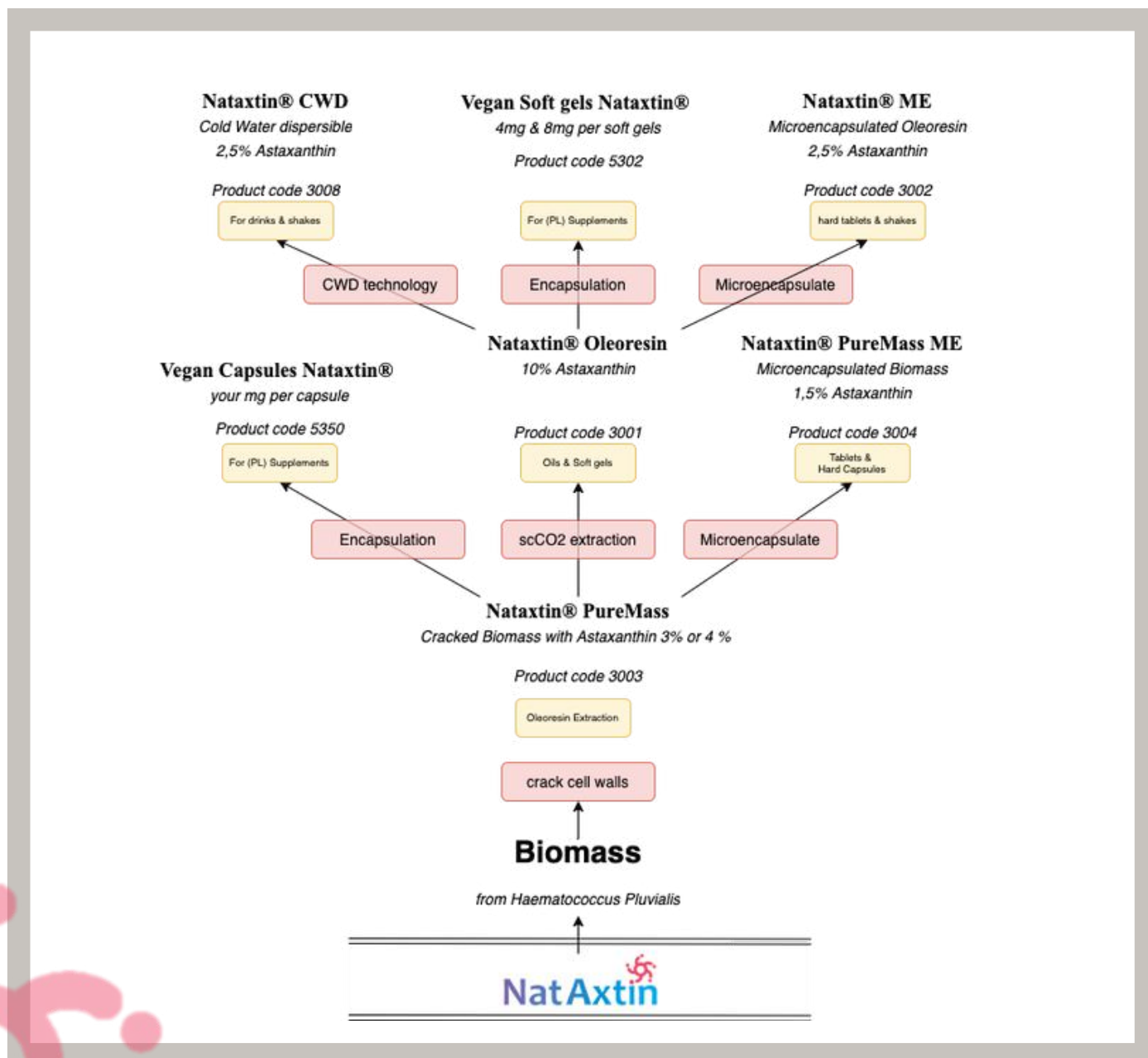
NatAxtin® Vegan soft gels 4mg& 8mg

NatAxtin® Vegan capsules (any concentration up to 8mg)





NatAxtin® Flowchart



NatAxtin® PureMass



Straight from the source

NatAxtin® PureMass is a powder format. These powders are the most crude products sold from *Haematococcus pluvialis* containing 3-4% Astaxanthin

NatAxtin® PureMass is made by cracking the cells of dried *Haematococcus* biomass making the astaxanthin (bio)available for extraction or other purposes.

This product is available in nearly unlimited quantities and can be freshly produced to suit your needs.

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Currently no EU health claims are allowed.
Original scientific papers are available upon request

NatAxtin
Made as nature intended

NatAxtin® is available in bulk oleoresin (5 & 10%), bulk powder (for tablets or in shakes) as well as vegan soft gels. The product is fully natural, Free from allergens and chemicals.

Guaranteed safety, quality and consistency by your trusted supplier Lus Health ingredients.
Find out more at lusingredients.com or email us info@lusingredients.com
NatAxtin® is a registered brand of Atacama Bio Natural.



EXTRACTION

NatAxtin® PureMass is ideally suited for extraction of astaxanthin by scCo2 to gain a concentrated oleoresin. The cells are already cracked and extraction can be executed immediately.



(COATED) TABLETS

A classic applications of powders is the tablet. We recommend extensive testing to make sure our NatAxtin® PureMass can resist the forces that are applied and the product remains stable



CAPSULES

Two-piece hard caps are one of the most common supplement forms on the market today. NatAxtin® PureMass is suited to fill capsules as the astaxanthin but will need a filler for optimal free flowing



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NatAxtin® Oleoresin

5 & 10% ASTAXANTHIN



High purity Astaxanthin

NatAxtin® oleoresin is a thick dark red oily substance at room temperature. It is sold in a container size fitting to a customer needs with an MOQ as low as 1 kilogram.

The oleoresin contains a minimum 5% or 10% astaxanthin depending on the product, with 95% of the astaxanthin in the favorable esterified format enabling high bioavailability.

NatAxtin® Oleoresin is always made by using super critical CO2 extraction making the product guaranteed free from solvents.

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AVAILABLE STRENGTHS

NatAxtin® oleoresin comes in two strengths, 5% & 10% astaxanthin, a percentage based upon pure astaxanthin, diluted in extra virgin olive oil.



STABLE PRODUCT

Freshly made and packaged under inert conditions our Nataxtin® oleoresin is stable for 48 months!



APPLICATIONS

Oleoresin is highly suitable for applications like soft gels or for use in oily solutions.



SUPERCRITICAL CO2

Our oleoresin is always extracted using scCO2 the most sustainable way of extracting Astaxanthin from algae.



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NatAxtin® Oleoresin

MICROENCAPSULATED



An input to your dry formulation

NatAxtin® Oleoresin ME is the powder format of the successful oleoresin. The product is made by using in-house spray drying technology and uses maltodextrin, pea protein and soy lecithin to create a free flowing powder. The product contains 2,5% astaxanthin.

The product has good mixing properties and suitable for capsules and shakes. The product is vegan but it does contain soy allergen that needs to be declared.

Though the product is not cold water dispersible it can be used as an ingredient into shakes at preferable levels of maximum 8mg of astaxanthin per day.

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SPRAY DRYING

NatAxtin® Oleoresin ME is spray dried in-house by Atacama Bio. The spray dried product has a shelf-life of 2 years



SHAKES

Use of the product into shakes gives, depending on the concentration, a substantial colour to the end product which can add health benefits **and** create visual appeal.



CAPSULES

Two-piece hard caps are one of the most common supplement forms on the market today. NatAxtin® Oleoresin ME is highly suitable to fill capsules as the astaxanthin is bioavailable but also protected after micro-encapsulation.



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Vegan soft gels

NATAXTIN® 4 & 8MG ASTAXANTHIN

OTHER CONCENTRATIONS UPON REQUEST



Sustainable health benefits

Our vegan soft gels are made with NatAxtin® and PalmfreeMCT™ and are 5 oval in size. Our most sold products, 4 & 8mg astaxanthin per soft gels are stock items and available at low MOQ to serve new customers quickly.

The soft gel shell is made from vegan ingredients including the food safe carrageenan, creating that dark red soft gel that consumers love. It is easy to digest and releases the contents within 10 minutes after reaching the stomach making sure the Nataxtin® is delivered effectively

We offer all our Nataxtin® soft gels in private label packaging of your choice starting as low as 1000 jars per order*

Nat Axtin
Made as nature intended

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Original scientific papers are available upon request

NatAxtin

NatAxtin® is available in bulk oleoresin (5 & 10%), bulk powder (for tablets or in shakes) as well as vegan soft gels. The product is fully natural, Free from allergens and chemicals.

Guaranteed safety, quality and consistency by your trusted supplier Lus Health ingredients.
Find out more at lusingredients.com or email us info@lusingredients.com
Nataxtin® is a registered brand of Atacama Bio Natural.



OLEORESIN &
MCT's

All our vegan soft gels are made with NatAxtin® and PalmfreeMCT™ to create the best and most natural product.

VEGAN

The vegan trend is no longer about replacing meat or fish in our diets but is now also becoming the new standard in supplements, as a hallmark of sustainability.



PRIVATE
LABEL

We have various options available to deliver our soft gel in turn key private label packaging. HDPE round packers, Pet packers or a sustainable favorite the glass jars



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Vegan hard caps

NATAXTIN® ASTAXANTHIN



Going further than antioxidant power

Our hard caps contain your label claim of choice for Astaxanthin with a maximum of 8mg in the EU. Astaxanthin is a highly researched and powerful antioxidant that is found in nature in sea food, flamingos and algae. Our source is fully natural from Haematococcus pluvialis, grown in the Atacama Desert.

Astaxanthin has shown benefits in different areas based upon its superior antioxidant capacity. It is believed to be in our diets as long as we have been eating fish and that humans may have evolved our biochemistry based upon this, just like fish oil fatty acids EPA & DHA.

Where some promote a synthetic and cheaper version of astaxanthin, the natural version have proved them wrong in delivering more effective benefits.

Our vegan hard caps provide an easy and effective way of delivering your customers with the amount of Astaxanthin desired up to the EU maximum of 8mg.

Our Astaxanthin hard caps contain NatAxtin, made as nature intended

Currently no EU health claims are allowed.

Original scientific papers are available upon request


NatAxtin

Nataxtin® is available in bulk oleoresin (5 & 10% TCAC), bulk powder (for tablets or in shakes) as well as vegan soft gels & hard caps

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WORLDS BEST ANTIOXIDANT



JOINT HEALTH

A number of studies show the impact of this great antioxidant on inflammation based joint conditions like carpal tunnel syndrome.



SKIN

Not just studies but consumers themselves claim astaxanthin is a tremendous protector against sunburn



Screen worker's eye health deteriorates over the years and many need glasses quite early in their careers. Studies show that when using Astaxanthin, you add protection and improve vision



ENDURANCE & MUSCLE ENERGY

Astaxanthin will get into your mitochondrial membrane where it will not only prevent reactive oxygen species from forming, but also enhance energy output by 10%. Cyclist have more power, runners run longer.



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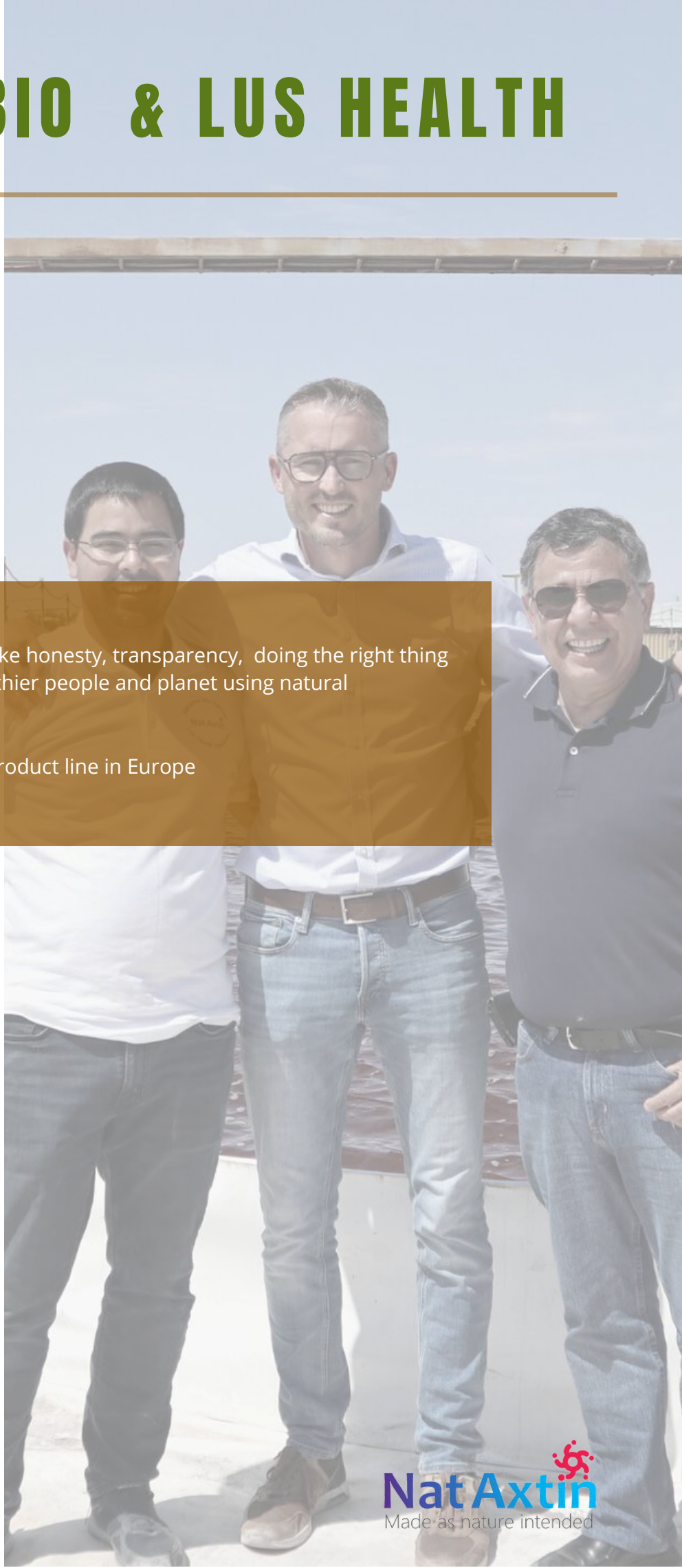
ATACAMA BIO & LUS HEALTH

Atacama Bio produces *Haematococcus pluvialis* in, what is probably the world's most natural and sustainable way, right in the heart of the Atacama Desert, known for its clean environment and clear skies. This is the basis for a highly cost-effective range of products called Nataxlin®

Collaboration highlights

- Companies connect on values like honesty, transparency, doing the right thing
- Ambitious to jointly create healthier people and planet using natural ingredients.
- Quality for an affordable price
- Lus distributes the Nataxlin® product line in Europe

Lus Health Ingredients is a company on a mission! To inspire people with healthy & sustainable choices, so that we may all benefit. Together with a portfolio of sustainable & plant-based products we deliver our customers with the science, market positioning and consumer information to help them succeed.



NATURAL ASTAXANTHIN

There are three astaxanthin-rich products currently on the market. A synthetic form, a yeast fermentation product and natural astaxanthin from *Haematococcus Pluvialis*. Astaxanthin-rich *Haematococcus* can be found in nature around the globe and co-existed with humans throughout their entire evolution.

Advantages of Natural Astaxanthin over other forms

- Higher bioavailability leading to more effective results as shown in several scientific studies
- An esterified and more stable product
- Fitting with the consumer needs for natural products

NAXA VERIFIED



As one of the worlds largest producers of Natural astaxanthin, Atacama Bio has registered its nature identical process and natural products with Naxa, the independent organisation that verifies natural origin. A Naxa-verified seal prevents counter-fitted or adulterated material made with cheaper synthetic Astaxanthin.

THE TRADEMARK

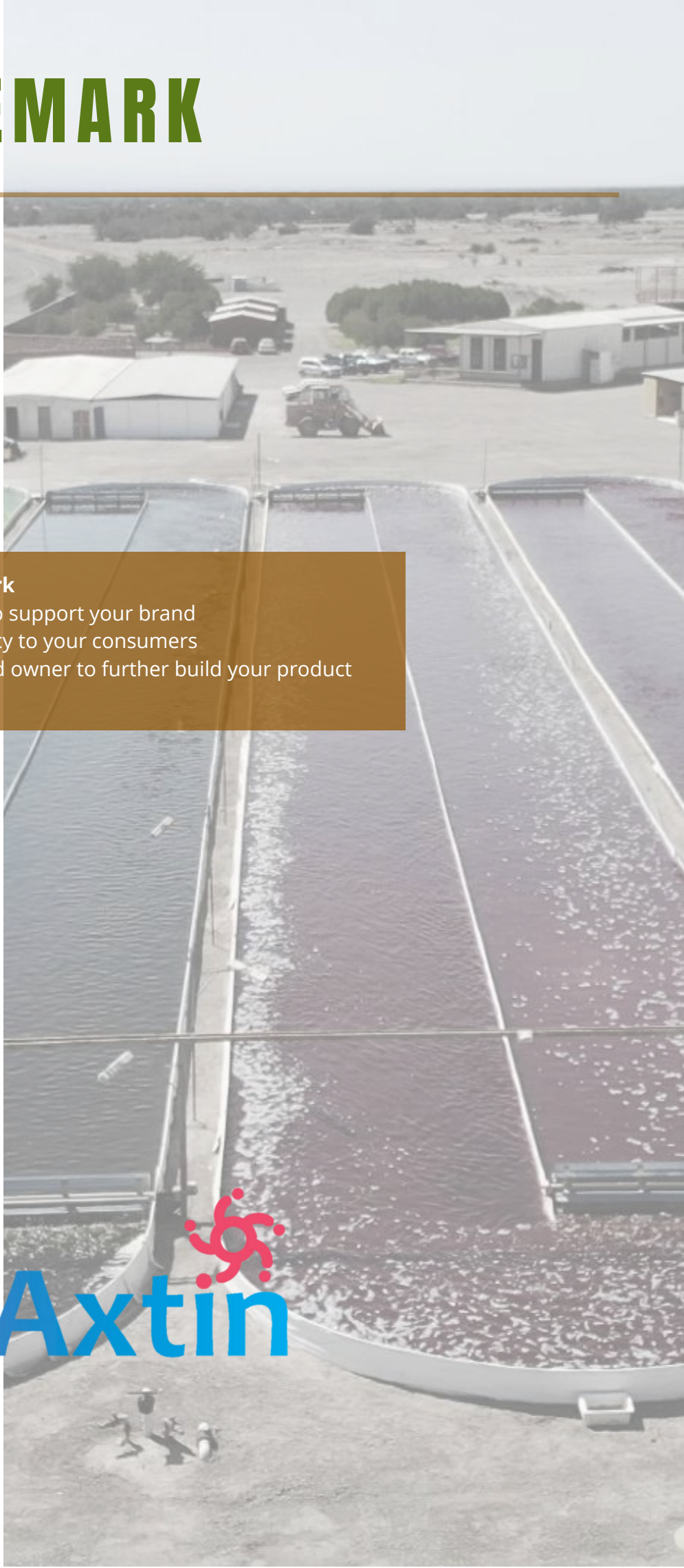
To our B2C clients we can provide the original Nataxtin® trademark which is a sign of trust and quality that your consumers will recognize.

Advantages of using the trademark

- Continuous quality and supply to support your brand
- A sign of quality and transparency to your consumers
- Scientific support from the brand owner to further build your product




NatAxtin





CONTACT DETAILS

The team of LUS health ingredients is dedicated to making the change towards a new way of eating. Sustainable plant based ingredients, Low carb and here to serve our customer with science, consumer and market information.

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