

Transform your health with
Marcus Rohrer Spirulina®



An ancient food for the modern world

Do you want to embrace great health – as naturally as possible?

Do you want to relish that fantastic feeling of total wellness?

From boosting your energy and resistance to infections to balancing your blood sugar and helping you lose weight naturally, extensive research has revealed that Marcus Rohrer Spirulina® provides many health and fitness benefits. What's more, it's also proven to be an excellent detox for your body.

Marcus Rohrer Spirulina® is one of the richest natural food sources to be found in the world today.

Read more in this handy booklet on the benefits of Spirulina and research that has been conducted on Marcus Rohrer Spirulina®.



Publisher's Note



Spirulina is one of nature's most power-packed nutrition miracles. It's a blue-green algae which has been consumed for centuries for its positive impact on health and well-being. Spirulina is the most nutrient-rich whole food in the world and is packed with high concentrations of protein and scores of other nutrients including vitamins, amino acids, minerals and enzymes.

There are volumes of studies and writings dedicated to Spirulina. This booklet is aimed at providing a digestible understanding of this powerful multi-nutrient which has impacted so positively on millions of people around the world, right through history until present day. Such is the power and credibility of this naturally occurring multi-nutrient, that it has been endorsed by the United Nations World Food Conference as a "food for the future".

Marcus Rohrer Spirulina® is manufactured by Cyanotech Corporation in Hawaii, and distributed internationally by OTC PHARMA INTERNATIONAL.

OTC PHARMA INTERNATIONAL, created in 1990, is based in the Netherlands, where it has been operating for over 20 years, and from where it oversees its ever-expanding operations. OTC PHARMA INTERNATIONAL has offices and partners in the Netherlands, Belgium, Luxembourg, Germany, Austria, Switzerland, Cyprus, Italy, Greece, Finland, Norway, Sweden, Denmark, the United Kingdom, France, Spain, Portugal, South Africa and South Korea. OTC lines can be found in over 38 countries.



OTC PHARMA INTERNATIONAL is the parent company of **OTC PHARMA SOUTH AFRICA (SA)**. Since OTC PHARMA SA's inception in 2002, it has grown into a leading and dynamic health and wellness company, handling products of superior standard and integrity. The company produces and markets a range of products, including leading brands such as Marcus Rohrer Spirulina®, Diabecinn, Similasan, Cetralin, Bye Wart!, Rescue Select, Picksan and Rock Hard Weekend.





Disclaimer

The information presented in this booklet is for educational purposes only and is not intended to be used to diagnose, treat, cure or prevent any disease. For medical advice or more information about specific medical problems, it's advisable to consult with a medical or health professional.

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Meet Marcus Rohrer



Fascinated by the perfection of nature

"In the early '80s I held Spirulina in my hand for the first time. I was immediately captivated. The blue-green micro-algae, only half a millimetre long, is one of nature's richest sources of nutrition. No more complete nutrient has ever been found in the world. Spirulina contains vitamins, minerals, highly nutritious vegetable protein, chlorophyll, enzymes and antioxidants – all in perfect harmony.

Soon I discovered that the abundance of nutrients is only part of its overall potential. There is something more that has been virtually ignored up until now: fresh Spirulina is also an enormous reservoir of pure sun energy!

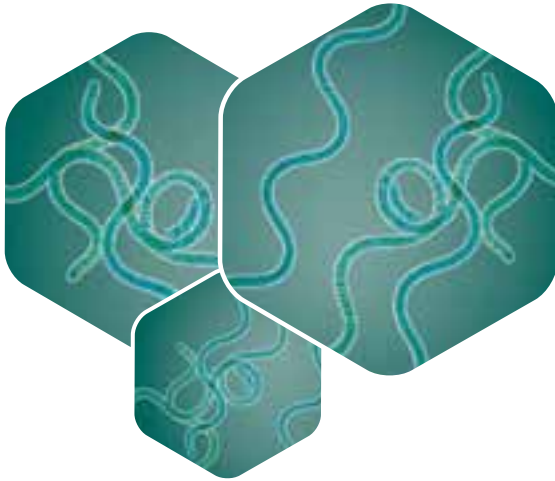
The latest research shows that this solar energy (also called biophotons) is of great importance to the quality of our food, our well-being and our health. However, energy in this form is highly sensitive and difficult to preserve. Research has also shown that conventional packaging cannot protect and preserve this sun energy sufficiently.

After searching for quite some time we found a solution. Thanks to the newly- developed VioSol glass, it is now possible to protect the valuable sun energy optimally and to preserve it for a long period of time. With this unique VioSol packaging concept, I can offer you top quality Spirulina with 100% original freshness and vitality.

This is my personal guarantee."

Marcus Rohrer

What is Spirulina?



Microscopic blue-green algae that has been used as a food source for centuries.

Perfect Food – Super Health

What's dark-green, doesn't look or smell very good but provides huge amounts of energy, increases your resistance to illnesses, supports your health and has been the subject of over 200 scientific studies for its anti-viral, anti-cancer and immunostimulating potential?

The answer is Spirulina, a tiny spiral-shaped, blue-green algae that was designed by nature already 3.5 billion years ago. The evolutionary bridge between bacteria and green plants, this particular type of algae, cyanobacteria, is extraordinary as it contained everything life needed to evolve.

Its use as a food source dates all the way back to 9th century Chad and it is believed Spirulina was used by the Aztecs in the 16th century Mexico. Historical records report the harvesting and selling of cakes made from Spirulina gathered from Lake Texcoco.

It was rediscovered in the 1950s in the same place where it is said to have its origins by a European scientific mission. The Spirulina was being harvested and sold in dried flat cakes called "dihe" at the local markets where natives would use it as a staple for many of their meals.

Spirulina didn't come into commercial production until the 1970s when a French company began the first large-scale Spirulina production plant. Within a few years, America and Japan began producing their own Spirulina.

Today, these nutrient-rich algae are being used around the world to treat illness and are being seriously discussed as a sustainable food source with the potential to end world hunger!.

It's a fact that our modern diet is filled with nutrient-depleted, over-processed convenience foods. As a result, many of us now take food supplements with extra vitamins and minerals to support our health. Scientists are now looking beyond vitamins to the power punch provided by phytonutrients which are contained in wholefoods like Spirulina.

"It is wholefoods that pack the disease-preventing wallop. That's because they harbour a whole ratatouille of compounds that have never seen the inside of a vitamin bottle."
(Newsweek, April 25, 1994).

Spirulina is a wholefood, or superfood, because its nutrient profile is more potent than many other foods, plants, grain or herbs known to man. These nutrients and phytonutrients make Spirulina an excellent wholefood alternative to isolated vitamin supplements.

It's been established by science that Spirulina is the perfect energy food for people of all ages and lifestyles who want a wholefood source of over 100 vitamins and other essential nutrients. It is considered one of the most complete naturally-cultivated nutrients in the world.

**Marcus Rohrer
Spirulina® is one of
the most nutrient-rich
Spirulina in the world**

But which Spirulina?

Why choose Marcus Rohrer Spirulina®?

Marcus Rohrer Spirulina® is a 100% top quality Spirulina with over 100 nutrients and the full spectrum of minerals. It is grown on a special water farm in sunny Hawaii. The quality is strictly monitored from source to final packaging. Daily controls during growth, careful processing in accordance with state-of-the-art techniques and quality controls in line with stringent international standards, guarantee optimum quality and purity. Marcus Rohrer can only apply this guarantee of quality to the original Marcus Rohrer Spirulina®, which is packaged in VioSol® glass.

Why is Marcus Rohrer Spirulina ® unique?

- It is sourced from the only Hawaiian cultivated Spirulina farm in the world.
- It is cultivated with 100% potable drinking water from Hawaiian aquifers and pure, deep ocean water in a bio-secure zone which is free of pesticides, herbicides.
- It is processed with patented Ocean Chill Drying technology for maximum nutrient potency.
- The continuous cultivation methods adhere to strict quality standards. Cyanotech Corporation, the manufacturers of Marcus Rohrer Spirulina®, is the first micro-algae company in the world to obtain and operate under an ISO 9001:2000 Quality Management System.
- Marcus Rohrer Spirulina ® delivers significantly more key nutrients per serving than any other Spirulina.

Spirulina contains:

- Protein
- Vitamins and Minerals
- Essential Fatty Acids
- Phytonutrients

Spirulina FAQs:

- Does Spirulina contain antioxidants? **Yes.**
- Is it a probiotic food? **You bet!**
- Is it a nutraceutical? **That too.**
- Is it loaded with phytochemicals?

All kinds. It contains compounds like phycocyanin, polysaccharides, and sulfolipids that enhance the immune system. This superfood has the most remarkable concentration of functional nutrients ever known in any food, plant, grain or herb.

Key Benefits of Marcus Rohrer Spirulina ®

- ✓ Rich in vitamins, minerals, trace elements, chlorophyll and enzymes
- ✓ An excellent source of vitamins A; K; B12 and of iron; manganese and chromium
- ✓ Contains every essential amino acid
- ✓ The best wholefood source of gamma linolenic acid (GLA)
- ✓ More carotenoids than any other wholefood
- ✓ Supports cardiovascular, eye and brain health
- ✓ Contains anti-viral and cancer preventative properties
- ✓ Boosts energy and immunity
- ✓ Increases fat oxidation
- ✓ Excellent building block for muscle tissue
- ✓ 100% natural
- ✓ No colourants or flavouring
- ✓ No preservatives
- ✓ Can be taken daily
- ✓ Easily digestible and absorbed easily
- ✓ Can be used in conjunction with other preparations without any risk
- ✓ Suitable for all ages
- ✓ More nutrition gram for gram than any other product in the world



What are the benefits of taking Marcus Rohrer Spirulina®?

Three-way action

Unhealthy eating, lack of exercise, smoking, drinking alcoholic beverages and stress, create a build-up of waste products in our bodies, causing us to feel tired and listless. Marcus Rohrer Spirulina® may quickly put you back on form by working on three levels simultaneously:

- 1. Cleansing:** Spirulina promotes the body's natural cleansing processes by giving the liver a helping hand and boosting other parts of the digestion and elimination process. As a result, you will feel much better with loads of extra energy.
- 2. Restoring:** Spirulina compensates for deficiencies in your diet and stimulates your metabolism. Your physical condition will improve and you will find that you recover much faster after exertion.
- 3. Fortifying:** Spirulina boosts resistance and activates your body's natural defence mechanisms. You will feel stronger and will find you are better able to cope with the pressures of daily life.

Specific Benefits of Marcus Rohrer Spirulina®

- **Good for everyone in the family**
Spirulina is suitable for both adults and children as an energy booster. Spirulina also helps adults and children build greater resistance to disease while helping to speed up recovery after an illness. Taking Spirulina will ensure you and your family do not suffer from nutritional deficiencies. Correct nutrition is particularly important during pregnancy and times of stress and fatigue, and here Spirulina is invaluable.
- **A natural cleansing cure**
Spirulina is ideal as a cleansing cure. By taking Spirulina in conjunction with 10-12 glasses of water daily (or herbal tea or juices), you'll find waste products will be removed even more rapidly from your body.
- **Natural weight control**
Spirulina is not a slimming product. However, owing to its rich nutritional content and exceptionally low kilojoule/calorie content (only seven calories or 27 kilojoules per six tablets), it will provide the body with sufficient nutrients to ensure good health is maintained. Spirulina also assists in normalising sugar levels in the bloodstream, which in turn minimises hunger pangs and cravings.

Just eating less is not sufficient to get rid of those extra kilos. Experts agree it is essential that your body receives sufficient vital nutrition, without surplus kilojoules/calories.

Gorging on 'empty' kilojoules from refined and processed foodstuffs (e.g. white sugar, white flour-based products, canned food, etc.) will only result in you feeling hungry again very soon. The reason is that your body has not taken in sufficient essential nutrients - only a large quantity of useless kilojoules/calories that do not do much more than pile on fat. Remember, it's not only about the amount you eat that is important, but also the quality of what you eat.

Keep hunger pangs at bay

It is possible that when you start dieting you become hungrier than usual. This is your body's way of telling you that it needs more essential nutrients. In this case, increase the dose of Spirulina to around 15 tablets per day. Once the nutrients have been topped up, you'll find your feelings of hunger will return to normal again.

Remember, it is possible to be overweight and still be undernourished. In this scenario your kilojoule (calorie) intake has been sufficient, but not your intake of essential nutrients.

Energy dip?

Do you find you experience an energy dip halfway through the afternoon? Instead of reaching for that chocolate, try taking a few Spirulina tablets. Your energy levels will quickly return to normal so that you can keep up that steady pace.

Healthy eating habits for weight control

- Eat fresh fruit, salad and freshly prepared vegetables as often as possible
- Drink sufficient (spring) water
- Do not combine too many things in one meal; keep it simple
- Try to chew for as long as possible; this will make you feel full much more quickly.

Spirulina – the natural beauty treatment

Spirulina contains exactly the right minerals and vitamins to keep your hair, skin and nails in optimum condition. Spirulina helps cleanse the blood resulting in smoother, healthier skin. **Tip:** Use Spirulina as a face mask to help soothe and heal irritated, problem skin.

Dry or lustreless hair, hair loss, dry skin or brittle nails are often the result of an inadequate diet. Hair root investigations have shown that these deficiencies may disappear taking a course of Spirulina for a period of two to three weeks. As a result, you'll find that your hair may become stronger, glossier and have more body after taking the Spirulina.. You may also find that your nails become stronger and break less easily.

How to make a Spirulina face pack

Crush two Spirulina tablets and mix them with cream cheese or yoghurt, or your favourite mask. Apply the mixture to thoroughly-cleansed skin and let it soak in for 15 minutes before rinsing with lukewarm water. The Spirulina face pack has a triple action: cleansing, relaxing and nourishing the skin. A Spirulina face mask can be used for all skin types, but it is especially beneficial for oily or problem skin.

Blemishes simply vanish

If your metabolism is not working properly, the internal cleansing of your body will not function efficiently either. The result is that your body will use your skin as an outlet for waste products, which can lead to blemishes. Spirulina cleanses the blood and boosts the metabolism. This results in a reduced build-up of waste substances, thereby reducing and eventually clearing up skin problems. Sometimes, when you first start taking Spirulina, you might find you breakout a little more than usual. This is because the internal cleansing of your body is just kicking in. Persevere because after the initial cleansing, your complexion will soon recover and start glowing! **Tip:** For best results in treating troublesome skin, combine eating Spirulina with regular applications of the face mask.

Hassle-free menstruation and menopause

Many menopausal women report less troublesome symptoms if they take Spirulina. They say they feel calmer, more energetic and in balance and have less bother from hot flushes.

Spirulina is also reported to have a positive effect during menstruation. Spirulina contains gamma-linolenic acid (GLA) which is changed into prostaglandin in the body. Certain prostaglandins help the uterus to shed the womb lining during menstruation by causing the contraction of the uterine muscles. As a result of the positive effect of the GLA in Spirulina, and other nutrients in Spirulina, many women therefore have shorter and easier menstruation and feel more comfortable in the days preceding menstruation because of the positive effect of GLA.

Stay healthy as you get older

The elderly have different nutritional needs to younger people. Older folk are more likely to be deficient in certain nutrients and may not absorb, utilise, or store nutrients efficiently. Many elderly people are on medication for extended periods, which interferes with nutrient levels. It may not be easy to obtain all the required nutrients from food, especially as older people tend to eat less. It is therefore important to take food supplements that can be easily digested and utilised by the body.

Spirulina is a high-energy food, and due to its soft cell wall, it offers nutrients in an easily-assimilated form. Moreover, Spirulina provides extra energy and keeps the mind clear, enabling older people to fully enjoy grandchildren, hobbies and travel, without becoming tired quickly.

A recent double-blind, placebo-controlled study to establish the effects of Spirulina in a group of elderly Koreans over a period of 16 weeks found that Spirulina had many "favourable effects", including a significant cholesterol-lowering effect. The researchers concluded that it was a "suitable functional food" for elderly men and women.

Spirulina and sports training

Many top athletes swear by the natural energy of Spirulina. Whether it is an endurance sport, strength sport or a sport requiring performance peaks, Spirulina gives you an advantage for several reasons: it does not contain artificial or banned substances.

How to make a Spirulina power drink:

Make a shake with bananas, eggs or powdered egg white, fruit juice and almonds. Add Spirulina powder or crushed tablets. (These can be easily mixed with all types of protein drinks and other sport drinks.)

Power drink for power sports

Spirulina not only helps keep your weight down, but can also be used to gain weight. For example, power athletes who want to become more muscular can mix Spirulina with a power drink.

Faster recovery

After a heavy training session or competition, the cleansing action of Spirulina speeds up the removal of waste products such as carbon dioxide and lactic acid from the body. Also, Spirulina replaces minerals that have been lost due to perspiration. The result: your body recovers sooner. A faster recovery means you can train more efficiently, and efficient training eventually increases your performance level.

More stamina

Spirulina ensures optimal metabolism during competition, leading to the efficient conversion of food into energy. This means that by using Spirulina, you won't experience that "dip" in energy you sometimes experience over a long haul. You will also find you do not fatigue easily and you can keep going for longer.

Higher resistance

Sometimes, excessive training can lower your resistance making you more susceptible to illnesses such as colds and flu. Due to its enormous richness in vital substances, Spirulina quickly replenishes shortages and increases your resistance. The chances of contracting such illnesses are reduced, therefore reducing the number of missed training sessions.

Staying alert with Spirulina

Work and study

Taking Spirulina may enhance your concentration, help you cope in stressful situations and improve your performance generally, making it the perfect mental booster during exams or when you have a deadline to meet.

Partying through the night

Spirulina keeps you fit and energised without the need to resort to chemical party drugs. You will realise that you can dance for longer and that after a long, heavy night you recover quicker, because waste products are removed from your body much faster. (Did you know many professional dancers are loyal Spirulina users?)

Had a little too much to drink?

To avoid waking up with a hangover, take a few Spirulina tablets before going to bed, together with one or two glasses of water. Do the same when you wake up and your hangover will be less severe. You will also feel fit and alert faster. Spirulina replenishes your body's nutrient stores and supports the liver's detoxification action. As alcohol causes the dehydration of body cells (including those of the brain) lots of water is necessary to re-hydrate the body. (Did you know Spirulina has been a secret miracle cure for carnival revellers for years?)

Stay fresh behind the wheel

Hundreds of years ago the Aztecs used Spirulina on long treks through perilous mountains. Today Spirulina is ideal for helping to keep you alert while driving in heavy traffic or when you're on a long trip. As Spirulina contains lots of beta-carotene, which is an important nutrient for eye health, it will also help with night driving.

TIP: Do you dread long flights? Use Spirulina to reduce the symptoms of jetlag so that you arrive at your destination feeling fresh and fit.



Healthy food for pets and plants

Spirulina is not only good for people - animals and plants thrive on it, too. When given Spirulina, older cats and dogs with dull, thinning coats have been seen to develop thick, lustrous coats; and pets with stiff joints appear to improve considerably, becoming supple and active again.

Veterinarians prescribe Spirulina for animals to aid recovery, increase stamina, relieve stiffness, and to boost toning of show animals.

Prize-winning koi carp are fed Spirulina to enhance their colour and health. Bird breeders add Spirulina to feed to enhance plumage colour and lustre. Spirulina is used extensively by aquaculture companies to improve growth rates, increase disease resistance, improve survival rates, reduce medication requirements and improve quality and colouration of various fish and shellfish (Henson 1990).

Organic farmers and keen gardeners can both use Spirulina as a complete and effective plant food, too. Many who have used it as a natural fertiliser have commented on the strong growth and lush foliage produced by the treated plants and crops. (**Tip:** Sprinkle a little Spirulina in the earth around your favourite indoor pot-plants and see what a difference it makes.) Organic farmers can use Spirulina as a completely natural and healthy fertiliser.

Top quality Spirulina

The quality of Spirulina is influenced by several factors.

Why is Marcus Rohrer Spirulina® of such high quality?

- Marcus Rohrer Spirulina grows on the sunshine island of Hawaii.
- The basins are situated on a dust-free lava field directly alongside the Pacific Ocean.
- The unique mixture of water in the basins is a blend of fresh water from the upland rainforest and deep seawater (exceptionally pure and very rich in minerals).
- The climate is ideal: the sun shines all year round, and a constant sea breeze ensures that the air is pure.
- Spirulina from Hawaii is not genetically modified and is cultivated without using herbicides or pesticides (see Marcus Rohrer Spirulina® certifications and checklists).
- A patented Ocean-Chill™ Drying system is used: oxygen free (nutrients cannot oxidise), within 5 seconds, low temperature, essential nutrients are fully preserved.

Besides these elements Marcus Rohrer Spirulina® is stored in VioSol® glass. This glass offers optimum protection making it possible to store the valuable sun energy for long periods.

Why supplement a healthy diet with Spirulina?

Spirulina's concentrated nutrition makes it an ideal food supplement for people of all ages and lifestyles, especially those who:

- Are looking for natural, wholesome nutrition
- Have inconsistent nutritious food habits
- Resist or dislike vegetables or fruits
- Are time-challenged for preparing or eating properly
- Participate in sports or athletic activities
- Need support for various health problems
- Need more energy
- Want to lose weight and detoxify
- Need to improve or support their immune system

Experts recommend eating 5 – 9 servings of fruit and vegetables each day. Even for a person that eats well, that's a challenge!

Marcus Rohrer Spirulina® is a healthy daily nutritional supplement, providing the following nutritional advantages:

- 3 grams of Marcus Rohrer Spirulina ® has the same amount of phytonutrients as 5 servings of fruits and vegetables
- 3 grams of Spirulina has more anti-oxidant and anti-inflammatory activity than 5 servings of vegetables and fruit
- It contains over 100 nutrients and all essential amino acids, chlorophyll, enzymes and antioxidants – everything your body needs
- It is a key building block for muscle tissue, essential in diet
- It balances your blood sugar levels
- It increases fat oxidation by 10.5%
- It stimulates your metabolism
- It detoxifies and purifies your body
- It contains 60% complete digestable protein
- It is proven to increase energy and athletic performance
- It is one of the most complete wholefoods available
- Marcus Rohrer Spirulina® complements a well-balanced diet

The nutrients in Marcus Rohrer Spirulina®

1. Amazing phytonutrients

Spirulina provides a wide range of delicate phytonutrients like Phycocyanin and carotenoids with significant health benefits. Phytonutrients are nutrients that come from plants and include antioxidants known for giving fruits and vegetables their orange and yellow colours. Nutritionists recommend increasing your intake of phytonutrients to protect against the harmful effects of UV sunlight, pollution, and environmental stress. Just a few tablets of Marcus Rohrer Spirulina® supply the phytonutrients contained in a whole salad.

2. High-quality protein

More than 60% of Spirulina is made up of high-quality protein, making it one of the richest sources of vegetable protein known to man. The quality of protein depends on the composition of the amino acids of which it is made. The protein in Spirulina contains all eight essential amino acids, plus nine non-essential amino acids, in exactly the right natural balance. (The human body cannot produce these essential amino acids itself; so they have to be ingested as part of your diet.)

While most animal proteins are high in fat, calories, and cholesterol, Spirulina contains only 5% fat, most of which are beneficial unsaturated fatty acids like GLA. There are less than four calories (16 kilojoules) in each gram and practically no cholesterol.

To determine the percentage of usable protein in a food, we measure the amount of protein present, its digestibility, and its biological value. The only food with more usable protein than Spirulina is eggs. None of the protein sources in the chart below has even close to the amount of other nutrients that Spirulina has; and of course, many of these other protein sources have very negative properties as well, such as being high in animal fat and cholesterol.

Usable Protein Of Common Protein Foods *

Food	Protein(%)	NPU(%) **	Usable Protein(%)
Dried eggs	47	94	44
Spirulina	65	57	37
Dried skimmed milk	36	82	30
Soy flour	37	61	23
Fish	22	80	18
Chicken	24	67	16
Beef	22	67	16
Peanuts	26	38	10

* Switzer (1982) ** Net Protein Utilisation

3. Vitamins

Spirulina contains all the vitamins within the recommended daily allowance, especially the all-important vitamin B complex. Because of its positive effect on the nervous system, vitamin B is important for people with busy and hectic lifestyles.

For vegetarians, the vitamin B 12 in Spirulina is especially important because it is extremely rare in most plant-based foods. In addition, Spirulina contains a large amount of beta-carotene, which is converted in the body into vitamin A. This increases your resistance to illness, is a powerful antioxidant, and is good for your skin, hair and nails. Lastly, Spirulina also contains vitamin E, which improves your mental and physical capacity and increases your vitality.

5. Minerals

No matter how important vitamins are, they cannot do anything for us without minerals. Although our bodies are able to produce a number of vitamins, it is impossible for us to produce minerals. Spirulina contains all the minerals that are essential for the human body – iron, magnesium, manganese, potassium, calcium, phosphorus, zinc and the rare selenium.



A food supplement will only work optimally if vitamins and minerals are naturally balanced and taken together. This is the great strength and synergy of Spirulina.

Spirulina is also one of the best natural sources of organically-bound iron. Unlike sea algae, Spirulina only contains traces of iodine. Spirulina is rich in iron, which, together with vitamins from the B complex, is required for the formation of red blood cells and for the transportation of oxygen in the blood.

A high percentage of anaemia is caused by a shortage of iron in the diet. Women have a greater need for iron than men due to menstruation and pregnancy. Also, many women are low on iron intake owing to their slimming habits. (Iron shortage due to slimming is mostly prevalent in women between the ages of 18 and 25 years.)

Tip: Try not to take Spirulina at the same time as you drink your coffee or tea. These drinks contain substances that slow down the complete absorption of iron. A half-hour gap would be sufficient.

6. Pigments

Chlorophyll

Spirulina has an abundance of chlorophyll. This is the green matter that enables plants to convert sunlight into nutrients and energy. Chlorophyll cleanses the blood and improves the absorption of iron by the bloodstream. Chlorophyll is also good for your liver, which plays an important role in removing toxins and waste products from your body. It also helps to eliminate heavy metals from the body.

Phycocyanin

One of the most important substances in Spirulina is phycocyanin, a blue colour pigment that is not found in any other plant. Just like chlorophyll, phycocyanin can absorb a lot of sunlight. Together they give Spirulina its blue-green colour. Phycocyanin is a strong antioxidant. It supports the

detoxifying action of the liver and kidneys. Because the liver is responsible for detoxifying poisons from the blood, liver cells are subject to high concentrations of toxic chemicals, which can cause free radical damage. Phycocyanin helps protect liver cells and aid the detoxification process. It also protects the cells against free radicals, stimulates red blood cell production and strengthens the immune system.

Carotenoids

The carotenoids are yellow, orange and red colour pigments that are found in carrots, oranges and other orange-coloured vegetables and fruits. Due to the very sunny climate in Hawaii where Marcus Rohrer Spirulina® is produced, it contains high concentrations of natural carotenoids. The most important substance is beta-carotene, which the body converts to vitamin A.

The carotenoids are powerful antioxidants; they protect the nervous system and increase resistance. They keep the skin elastic and ensure that the hair, nails and eyes are in optimal condition. Beta-carotene also protects the skin against UV radiation. Numerous studies have indicated that people whose diets contain a lot of foods rich in carotenoids have a lower risk of developing various types of cancer.

Carotenoids are essential for the efficient functioning of the eyes. (Did you know that if you sit at a computer screen often, watch a lot of TV or drive at night, you need extra beta-carotene?)

- **Natural vs. synthetic carotenoids:**

A good illustration of the importance of taking natural vitamins from food can be made with beta-carotene, one of the carotenoids present in Spirulina in large quantities. There are many synthetic beta-carotene supplements on the market. In fact, even some that claim to be “natural” are synthetic. Nature makes beta-carotene in two shapes, called cis and trans, while synthetic is primarily only one shape (trans).

Cis and trans forms of beta-carotene are two different compounds, different chemically, and different physically. They behave differently when crystallising and when dissolving. There is also a difference when they are absorbed in the intestine for digestion. In fact, a study showed that chickens and rats absorb ten times more natural beta-carotene than synthetic. In studies where beta-carotene is correlated with lower incidence of cancer, the beta-carotene is from natural food. This is one reason why major government agencies in the USA, such as the National Institute of Health and the National Cancer Institute, recommend natural food sources of beta-carotene.

Another advantage of natural beta-carotene is that it contains no artificial ingredients or preservatives, whereas synthetic beta-carotene contains preservatives and trace residues of chemicals used in the refining process.

There are between 400 and 600 carotenoids about which we know very little: almost all the research so far has concentrated on beta-carotene, lutein, lycopene, zeaxanthin and most recently astaxanthin. The full range of carotenoids is only found in food, which is why it is important to include carotenoid-rich foods in your diet.

It is quite possible that the other carotenoids are just as valuable for your health as beta-carotene. Carotenoids are used and stored in several parts of the body, including the adrenal glands, the reproductive system, the pancreas and spleen, the skin, and the retina. Depletion of these stores results in disturbances in the body despite adequate levels of beta-carotene.

- **Sources of natural beta-carotene**

There are many food sources of beta-carotene. Spinach, kale and other dark green leafy vegetables, broccoli, pumpkin, carrots, squash, papayas, cantaloupes, and other yellow and orange fruits and vegetables are all excellent sources. Unfortunately, most people get only 25-30% of the daily dietary carotenoid intake recommended in a cancer-preventive diet; and many people are unwilling to make radical dietary changes.

The easy way to eat your daily dose of food-based beta-carotene is to take Spirulina, the richest wholefood source of beta-carotene.

Unlike other beta-carotene supplements, Spirulina is a wholefood with its beta-carotene in a naturally-chelated food matrix. And Spirulina is not only rich in beta-carotene; it also contains other very important carotenoids such as zeaxanthin and beta-cryptoxanthin, as well as lesser-known carotenoids such as myxoxanthophyll and echinenone.

Food Comparison Chart

Food	Beta-carotene
Hawaiian Spirulina*, 3 grams	9.0 mg
Carrot, 1 medium	4.9 mg
Papaya, 1 medium	3.7 mg
Chlorella, 3 grams	1.0 mg
Apricot, 1 medium	0.9 mg

**From Cyanotech Corporation*

Zeaxanthin

The second most prevalent carotenoid in Spirulina is zeaxanthin. In fact, there is more zeaxanthin in just 3g of Marcus Rohrer Spirulina® than there is in a large bowl of spinach, one of nature's richest sources. Zeaxanthin is a very important antioxidant for two reasons:

- 1) It is one of the few antioxidants that can cross the blood-brain barrier and bring antioxidant protection to the eyes, brain and central nervous system.
- 2) It is also one of the few antioxidants that never becomes a pro-oxidant (causes oxidation in the body).

7. Gamma linolenic acid (GLA)

Spirulina contains a large quantity of gamma linolenic acid (GLA). Mother's milk and oil of the evening primrose are two other sources of this rare fatty acid. Your body converts GLA into DGLA and from there into prostaglandins which are extremely active hormone-like substances and necessary in a vast array of bodily functions.

Gamma linolenic acid is also good for normal and regular menstrual periods. In addition, it helps to keep your cholesterol level down.

Evidence is mounting that factors such as stress, ageing, alcohol consumption, and poor diet make it difficult for our bodies to convert linoleic

acid to GLA. And some people simply have insufficient linoleic acid in their diets. This makes finding a dietary source of GLA very important. Fortunately, the plant world has a few good sources: Spirulina, black currant seed oil, oil of evening primrose, and borage seed oil are all rich in GLA. Of these, only Spirulina provides GLA in a wholefood form, a form the body can efficiently use. In fact, Spirulina and mother's milk are the only natural food sources of GLA. The others are all extracted oil compounds. The concentration of GLA in Spirulina is remarkably high, so that five grams provide 50 milligrams compared to an evening primrose oil capsule of 500 milligrams which provides 45-50 milligrams. And, unlike the other sources, Spirulina provides a wide range of additional nutrients.

8. Enzymes

Spirulina contains a number of important enzymes, such as superoxide dismutase (SOD). An iron-containing enzyme, SOD supports important body-cell processes and also protects the cells from free radicals. Enzymes are essential for the construction of your cells. You could not live without enzymes.

Enzymes are very vulnerable and are easily destroyed by heat or oxidation. Fortunately, Marcus Rohrer Spirulina® exhibits an extremely high enzyme activity owing to its processing.



Nutrient analysis of Marcus Rohrer Spirulina®

Average value per 6 tablets (300mg each)

Nutritional value

Proteins	1,04 g
Carbohydrates	390 mg
Lipids	95 mg
Energy	27 KJ (6.6 kcal)

Essential amino acids

Isoleucine	55.4 mg
Leucine	89.1 mg
Lysine	50 mg
Methionine	24.2 mg
Phenylalanine	47.6 mg
Threonine	47.4 mg
Tryptophane	17.1 mg
Valine	59.2 mg

Inssential amino acids

Alanine	4,66
Arginine	4,76
Systine	0,56
Glutamic acid	8,44
Glycine	3,19
Histidine	1,50
Proline	2,47

Serine	2,65
Tyrosine	2,38

Minerals

	Average mg/300g
Calcium (Ca)	8.4 mg
Iron (Fe)	1 mg
Potassium (K)	33.6 mg
Magnesium (Mg)	13.8 mg
Manganese (Mn)	57.6 mcg
Molybdenum (Mo)	7.3 mcg
Sodium (Na)	25.2 mg
Phosphorous (P)	18 mg
Selenium (Se)	0.6 mcg
Zinc (Zn)	48.6 mcg

Vitamins

	Average mg/300g
Beta-carotene (Provitamin A)	4.04 mcg
Thiamine (B1)	45 mcg
Riboflavin (B2)	66 mcg
Niacin (B3)	270 mcg
Pantothenic acid (B5)	2.7 mcg
Pyridoxine (B6)	9 mcg
Cyanocobalamin (B12)	1.2 mcg
Delta-alpha tocopherol (E)	63 mcg

Biotin (H)	0.5 mcg
Folic acid	2.7 mcg
Inositol	1 mcg

Lipids

	Average mg/100g
Gamma-linolenic acid (GLA)	1,000
Essential linoleic acid	1,100
Dihomogamma linoleic acid	53
Alpha linolenic acid	1,45
Docosahexaenoic acid (DHA)	1,45
Arachin acid	4,8
Eruca acid	2,4
Lignoceric acid	2,4
Myristic acid	108
Oleic acid	17
Palmitic acid	2000
Palmitoleic oil acid	198
Stearic acid	6,8

Pigments and enzymes

Chlorophyll	18.5 mg
Carotenoids	8.8 mg
C-Phycocyanin	146 mg
Superoxyde dismutase (SOD)	1296 units

Gamma-Linolenic acid (GLA)	13.3 mg
Linolenic acid	15 mg

Pesticides not evidentable

Microbiology

Total amount of Germ	< 1,000 KbE/g
Fungus	< 100 KbE/g
Sediment	< 100 KbE/g
Coliform (Enterobact)	not evidentable
Salmonella	not evidentable
Staphylococcus	not evidentable
Eschericia coli	not evidentable

Because Spirulina is a totally natural product, the measured values are to natural fluctuations, caused by the effects of weather conditions etc.

The potency of Spirulina does not depend solely on the amounts of individual substances, but on the combined synergistic effect of all the substances together. Aside from the substances that can be weighed and counted, the bioenergetic value also plays an important role.

(*1mg = 1000 mcg)

Spirulina: the sensible dietary supplement

Spirulina is most effective when combined with a natural diet, and offers many benefits, including:

- Supports cardiovascular, eye and brain health
- Strengthens immune system
- Supports increased energy levels
- Supports healthy skin
- Combats age-related macular degeneration
- Supports bone health
- Green energy (includes the Eco Diet) www.ecodiet.co.za
- Natural weight control, increases fat oxidation
- Vegetable protein and B-12 source for vegetarians.
- Reduces cholesterol and PMS.
- Ideal for fasting and for body cleansing programmes
- Energy and endurance for athletes and body builders.
- Ideal for children and pets



Anit-ageing protection

Free radicals are highly unstable molecules that, if left unchecked, trigger a chain reaction called oxidation, that can weaken or destroy cells. Exposure to sunlight, pollution, smoke and everyday stress produces free radicals which damage our cells' DNA and inhibit our cells from functioning normally.

This oxidative stress can lead to:

- Inflammation
- Premature ageing of the skin
- Impaired immune functions
- Degenerative diseases
- Tissue damage
- Many life threatening diseases

Antioxidants help prevent and protect some damage before it occurs, by neutralising free radicals.

Antioxidants in Marcus Rohrer Spirulina ®

Exceptionally rich in antioxidants, Marcus Rohrer Spirulina ® provides added protection for today's busy lifestyles by assisting the body in its battle against harmful free radicals.

- **Beta-carotene** – A carotenoid for skin, eyes, immune system and a safe source of vitamin A.
- **Zeaxanthin** – A carotenoid to fight free radical damage with specific benefits for eye and cellular health.
- **Phycocyanin** – A photosynthetic pigment for liver and kidney health, which is very hard to find in foods.
- **Super Oxide Dismutase (SOD)** Both an antioxidant and an anti-inflammatory, it neutralises free radicals and helps repair age-related cell degeneration.

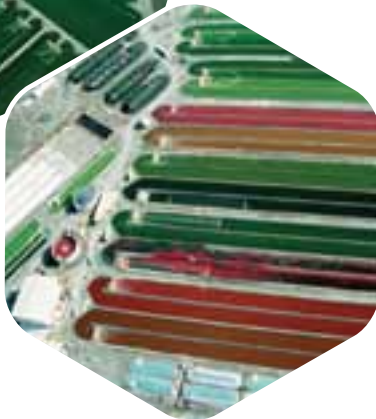
Taken daily as a supplement, 3g of Marcus Rohrer Spirulina ® can help strengthen the body's defence against free radical damage.

Where and how is Marcus Rohrer Spirulina® produced?



*A bird's-eye-view
of Cyanotech's
Marcus Rohrer
Spirulina® crop*

*Marcus Rohrer
manufactures and
delivers products with
one of the highest
nutritional contents
available in the
marketplace*



Marcus Rohrer Spirulina® is manufactured by Cyanotech Corporation on a spectacular 90-acre farm on the coast of Kona, Big Island of Hawaii. This pristine location, boasting year-round sunshine, has been certified as a bio-secure zone, which means the farm has been certified free of pesticides, herbicides and industrial pollutants.

Recognised as a global leader in microalgae technology, Cyanotech Corporation has produced Marcus Rohrer Spirulina® continuously since 1985 and has won numerous awards and accolades.

It has developed and received two US Environmental Process Patents:

- The unique **Ocean Chill Drying™** process, which uses sea water for cooling to best preserve the antioxidants and key nutrients of the Spirulina, and
- The cogeneration of electricity using CO2 in algae ponds.

Cyanotech is also recognised for its long-term commitment to environmental sustainability and was awarded the Audubon Award in 2001 for the protection of endangered bird species.

Furthermore, it

- Produces the world's most productive crop with no fertiliser or manure run-off
- Recycles water wherever possible in the manufacturing process
- Cools its culture ponds and buildings with air-conditioning utilising sea water
- Prints labels on tree-free, water-free Fiberstone®.

Cyanotech is committed to manufacturing and delivering products with the highest nutritional content.

- It uses only 100% potable drinking water from Hawaiian aquifers and pure, deep ocean water with 96 trace minerals. Marcus Rohrer Spirulina® is guaranteed GMO-free and non-irradiated.
- It has been GMP certified (Good Manufacturing Practices) by the Natural Products Association™.
- It is the first microalgae company in the world to obtain and operate under an ISO 9001:2000 Quality Management System.
- Generally Recognized as Safe (GRAS) status by US FDA for use as a food ingredient, beverage and augments energy and immune response.



Marcus Rohrer Spirulina ® cultivation

Cultivated using seawater pumped from a depth of 2 000 ft, Marcus Rohrer Spirulina ® is the only cultured microalgae grown with pure, deep ocean water as a source of all 94 minerals and trace elements.

Spirulina thrives in shallow ponds next to the Pacific Ocean

- The Spirulina grows in shallow ponds mixed with fresh water and mineral-rich deep ocean water in a base of food-grade baking soda. (All other Spirulina farms use river water or irrigation water for cultivation.)
- Paddle wheels gently stir the mixture to assure perfect sun exposure.
- This method also ensures Spirulina remains contaminant-free and that it maintains a consistently superior nutritional profile.

Separation screens

Spirulina is meticulously washed over stainless steel screens. Using a pollution-free, 100% recycled process; all the pond water is returned to the growing ponds for the next cycle.

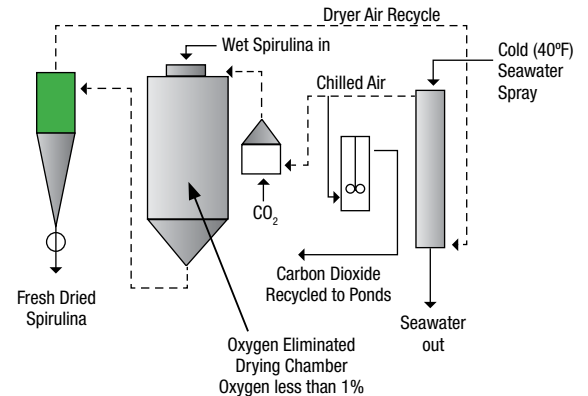


Vacuum washing system

Before drying, Spirulina is rinsed three times. Numerous fresh water rinses give Marcus Rohrer Spirulina® a mild, salt-free taste.



Ocean Chill Drying™



Marcus Rohrer utilises a patented Ocean Chill Drying™ process in the production of its Spirulina.

- This eliminates the oxidation of carotenes and fatty acids that occurs in standard dryers.
- The closed system uses less than 1% oxygen by flushing with nitrogen and carbon dioxide
- Uses pure, deep ocean water to provide dehumidification.



Finished powder

The dried powder is immediately protected from oxidation. Using a unique patented process Marcus Rohrer makes use of oxygen absorbers which are enclosed in heat-sealed, metal-lined foil bags. These are then placed into cardboard boxes. This method assures that you receive **Marcus Rohrer Spirulina®** as fresh as the day it was harvested...



Cold compression tableting

Marcus Rohrer Spirulina ® uses an advanced tableting facility, specifically enabling the company to make tablets with a cold compression technique.



Extensive quality analysis

The strictest good manufacturing practices are adhered to and each batch of Marcus Rohrer Spirulina ® undergoes testing at three separate laboratories.

- Marcus Rohrer Spirulina ® is reviewed and measured from cultivation to harvesting.
- Content testing of all nutrients, carotenoids and heavy metals.
- Post-production quality is reviewed to ensure that products meet specifications

Marcus Rohrer Spirulina® packaging secrets - the violet 'Magic Glass'

Ancient cultures such as the early Egyptians stored valuable essential oils and medicines in either gold or violet pots. Scientific research has now confirmed what these old cultures learned long ago: violet light has the highest value of any visible colour i.e. 750.000 billion-Hertz. This high frequency precisely matches the oscillation of our nervous system. By contrast, colours such as brown, grey and black have extremely low oscillation frequencies.

Packaging

The special design of the Spirulina jar

The glass container for the tablets was very carefully designed in accordance with the laws of energetic conformance. Proceeding from the prototype of an egg, a special design evolved with exclusively round and oval lines avoiding sharp edges.

The glass container is violet in colour and is called VioSol® Glass.

The effect of sunlight

Sunlight is crucial for the growth of all plants. No life is possible without light. When plants, for example, are ripe for harvesting, they must be used immediately or preserved efficiently otherwise decay will set in. Basically, the same light that made growth possible now accelerates the process of molecular decomposition, reducing reduces its bio-energy.

The light spectrum

Sunlight consists of the visible light spectrum (with the familiar colours of the rainbow), and the invisible ultraviolet and infrared. If sunlight is directed on a prism, the spectral colours become visible. Colours with a high frequency (measured in Hertz), such as violet, have a short wavelength (measured in nanometres); and colours with a low frequency, such as red, have a long wavelength. Infrared and ultraviolet are not visible to the human eye.



Traditional packaging material

Almost all natural substances (herb tinctures, essential oils, etc.) are packaged in traditional brown glass or plastic. Scientific measurements show clearly that brown glass allows visible light to pass through it and offers no protection. The same goes for green and blue glass: both colours allow the entire visible spectrum to penetrate. Studies show that the range of frequencies of the visible light causes frequency chaos in the jar, stimulating the decomposition process.

Unlike glass, plastic bottles are porous, studies showing that this kind of packaging allows oxygen to penetrate and initiate oxidative breakdown of key components. They can also emit harmful gases (especially at high temperatures) which can destroy subtle bio-energies.

The properties of VioSol® glass

VioSol® glass offers complete protection against the impairing frequencies of visible light while at the same time being penetrable in the high-energy UV/violet spectrum and the infrared spectrum. The metal oxides in the glass are also capable of absorbing light energy from outside (like a solar collector), and then releasing that energy very slowly to the inside.

This means that a unique high-energy environment develops in the VioSol® glass. The molecular structure of a substance is constantly stimulated and reinforced. The decomposition process slows, and the subtle bio-energy remains at original levels for long periods. This gives VioSol® glass a natural stimulant and preservative effect.

No other glass offers this unique combination of total protection in the visible spectrum and at the same time, transparency in the UV, violet and infrared spectra!

The magic of VioSol® glass makes Marcus Rohrer Spirulina® unique.

Decorative recycling

Due to its preservative properties, VioSol® glass is ideal for subsequent re-use to store spices, tea, medicinal herbs, etc. They remain fresh for long periods and retain their natural strength. VioSol® glass is also ideal for use with the handy refill packs.

The secret of VioSol® glass

The violet VioSol glass was specially developed to give optimum protection to the bio-energetic value of Marcus Rohrer Spirulina. Scientific investigations have confirmed that the pure violet light spectrum of VioSol® glass continually stimulates and energises the Spirulina molecules. This is exactly what enhances the vitality of Marcus Rohrer Spirulina and keeps the product fresh for much longer.

Only Marcus Rohrer owns the worldwide exclusive rights to Spirulina in the VioSol® glass.

Scientific Study

Swiss photobiologist Dr H Niggli and German Prof F A Popp investigated the protective function of VioSol® glass and found that:

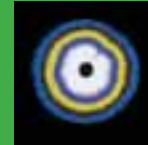
- “The samples in the violet glass jar had a significantly superior storage quality, exhibited significantly steadier oscillation and displayed the lowest energy loss.”
- “The samples stored in violet glass can transfer the largest quantity of ultra weak photon energy on synthetic cell liquids, which means that they can pass the most sun energy.”
- “The storage quality of the newly developed glass foil is exceptional. Although it does not quite measure up to violet glass, it nevertheless provides an excellent, unbreakable alternative for the transportation of Spirulina.”



The energy field of Spirulina stored in VioSol® glass



Spirulina stored in brown glass container



Spirulina stored in plastic container



Special hexagonal-shaped tablets and VioSol® glass packaging

Q. Why are the tablets hexagonal?

As highly-sensitive light energy is also affected by form, Marcus Rohrer worked with specialists in the bio-energy field to develop a hexagonal-shaped Spirulina tablet. The special hexagonal shape is found in nature in honeycombs, crystals and molecular structures. Studies show that in a hexagon, the energy field is preserved for a much longer period compared to the energy in a circle, for example.

Dosage for Marcus Rohrer Spirulina®

How to take Spirulina

Dosage of tablets

Adults: 3 - 6 tablets daily.

Children: 1 - 3 tablets daily.

If this is the first time you are taking Spirulina, build up the dose gradually:

- For the first two days, take 1 tablet daily.
- For the next two days, take 2 tablets daily.
- For the following two days take 3 tablets daily, etc., until you reach the required daily dosage of 3 - 6 tablets.
- Take the tablets with water just before meals.
- When slimming, take the tablets with a large glass of water half an hour before meals.
- You can either take the daily dose all at once in the morning, or in divided doses spread over the course of the day.
- It is better not to take Spirulina in the evening unless you have to work late into the night, or you are going out on the town and need an extra energy boost.
- Drink plenty of water throughout the day as this will support your body's natural cleansing processes.

Slimmers and athletes

To use as a slimming aid, take the tablets 30 - 60 minutes before meals. You can also take the tablets between meals if you feel hungry. Athletes may take between 3-6 extra tablets before training.

Children and the elderly

The dose must always be adjusted for use by children. For young children, the average dose is 1 tablet to be taken 2-3 times daily. Babies may be given one teaspoon of powder (tablets can easily be crushed) mixed into water or apple juice and administered in small doses throughout the day.

People with metabolic disorders or the elderly should build up their dose slowly, starting with 1 tablet daily.

Pregnancy

Spirulina may also be used during pregnancy and when breastfeeding. If you have used Spirulina before falling pregnant, you may continue using it and even increase the dose. If you are pregnant and wish to use Spirulina for the first time, it is recommend that you build up the dose slowly at first, starting at 1 or 2 tablets daily.



New research reveals multiple health benefits

Researchers around the world are discovering how and why this particular microalgae is so effective for human and animal health. Hundreds of published scientific studies since the 1970s reveal how Spirulina, with its abundant supply of vitamins and minerals, boosts the immune system and improves health in many ways.

Recently, Dr Bob Capelli and Dr Gerald R Cysewski of the Cyanotech Corporation reviewed existing studies on Spirulina, looking specifically at Spirulina's effects on the immune system and on cardiovascular health as well as its effectiveness as an anti-viral agent and as a cancer preventative.

Their findings have recently been published in the respected journal Nutra Foods, a testimony that research into Spirulina is valid and of merit.

Diversity of research

Research on Spirulina's health benefits has been far-ranging, but interest has increased dramatically in the last ten years.

While the strong antioxidant profile of Spirulina as well as its anti-inflammatory activity is particularly well documented in scientific literature, there are a number of exciting new potential health applications being studied, including Spirulina's effectiveness to:

- Protect the liver and kidneys
- Improve blood quality and prevent anaemia
- Remove heavy metals from the body
- Control allergic rhinitis
- Control diabetes

Boosts the immune system

The benefits of Spirulina in building immunity and improving resistance to viral infections are well documented and for decades, users have anecdotally reported a decrease in colds and flu when using Spirulina.

Several pre-clinical animal studies have now shown that Spirulina:

- Enhances the resistance of humans, mammals, chickens and fish to infections
- Influences the production of all types of blood cells (haemopoieses),
- Stimulates the production of antibodies and cytokines (small proteins)

that are secreted by specific cells of the immune system and which carry signals locally between cells).

These pre-clinical studies have also shown that under the influence of Spirulina macrophages, T and B cells are activated in the body.

In one study done by the Department of Immunology at the Osaka Medical Centre for Cancer and Cardiovascular Diseases in Japan, blood analysis of volunteers given a hot water Spirulina extract showed significant improvement in immune markers, indicating its potential to suppress cancer development and viral infection.

The key nutrient, found only in Spirulina and other species of blue-green microalgae is the water-soluble blue pigment, phycocyanin, a potent antioxidant that possesses strong immune-enhancing and anti-viral properties.

Boosts resistance to viruses

A food, a nutritional supplement or a drug that has documented anti-viral activity as well as an ability to positively affect the immune response is certainly of considerable clinical interest today, especially in the face of the HIV/Aids epidemic.

Based on existing research, Spirulina shows great potential as it contains several unique nutrients.

In the 1990s, researchers at the Toyama Medical and Pharmaceutical University in Japan isolated a sulfated polysaccharide found in Spirulina, a compound called Calcium Spirulan, and proved in two separate published studies that it is effective against a variety of viruses.

In the studies, it was shown that Calcium Spirulan inhibited the replication of viruses such as Herpes simplex type 1, human cytomegalovirus, measles, influenza A and HIV-1 – in other words, this special compound inhibited the penetration of these viruses into host cells.

The Japanese research resulted in the publication of an interesting paper, "Algae—a poor man's HAART [Highly Active Antiretroviral Therapy]", in 2004 by a group from the Norman J Arnold School of Public Health at the University of South Carolina in the United States. Their paper concluded that "regular consumption of dietary algae might help prevent HIV infection and suppress viral load among those infected."

They authors pointed out that even within Africa, where the highest rates of HIV infection are found, the rates vary dramatically between different countries and groups of people. "Chad has consistently reported low rates of HIV/AIDS...the Kanemba, one of the major tribal groups in Chad, eat a blue green alga (Spirulina) daily."

The average daily consumption of Spirulina by the Kanemba was cited between 3-13 grams. "

What's important to note from these studies is that Spirulina's anti-viral properties are not only derived from its polysaccharides. Other components in Spirulina also play a role in its antiviral activity.

Helps reduce cancer risk

Although there is not a great deal of human clinical research, there is a significant volume of studies showing Spirulina's potential to prevent cancer (carcinogenesis) and to shrink tumours in animals.

A study done in China, for example, recently showed selenium-infused Spirulina inhibited the growth of MCF-7 breast cancer cells.

There's also been a lot of interest in the compound phycocyanin, the blue water soluble pigment found in Spirulina, as results into its cancer-related benefits have proven extremely promising so far.

Lowers stroke risk

There's mounting evidence in scientific literature of the benefits of using Spirulina as a preventative tonic for the heart and cardiovascular system.

In a study done by Dr Andhra Pradesh of the Institute of Pharmaceutical Technology in India, it was found that a dosage of 180mg of Spirulina had a protective effect on the brain and nervous systems of rats not given the Spirulina before the experiment. This lab test shows the promising effect of Spirulina on stroke prevention.

Helps normalise cholesterol naturally

According to a study done on elderly male and female patients ages 60-87, those given 8 grams of Spirulina per day for 16 consecutive weeks showed lower cholesterol levels than those given a placebo.

In an important review published last year, it was noted that "in humans, Spirulina intake decreases blood pressure and plasma lipid concentrations, especially triacylglycerols and low density lipoprotein-cholesterol. It indirectly modifies the total cholesterol and high density lipoprotein-cholesterol values."

These researchers pointed out that essential fatty acids like gamma-linolenic acid (GLA) can prevent cholesterol from concentrating in the body, and noted that Spirulina has a considerable amount of GLA.

Balances blood pressure

According to a study done by the Dept of Biochemistry in Mexico, 4.5 grams of Spirulina given daily, was shown to regulate blood pressure among both women and men between the ages of 18-65 with no other dietary changes made during the 6 weeks the experiment was run.

Nothing to sneeze at

In one study, patients treated with Spirulina reported relief of symptoms commonly associated with allergic rhinitis, such as nasal discharge and congestion, sneezing and itching when given Spirulina.

LATEST FINDINGS

A new source of vitamin K2

There's a growing body of evidence showing the benefits of vitamin K2, an important nutrient believed to:

- Support blood health
- Support cardiovascular health and circulation
- Support bone health and benefit people with osteoporosis

In addition, exciting new research is showing that Vitamin K2 may be beneficial for Alzheimer's disease, a variety of cancers, varicose veins, and skin aging.

Based on independent analytical results, 15 mcg/3gm daily serving of MRS provides 19% of the Daily Recommended Value.

Polysaccharides in Marcus Rohrer Spirulina is a promising alternative for cancer immunotherapy.

Japanese researchers recently teamed up to validate studies on the effects of polysaccharides in Hawaiian Spirulina Pacifica (Marcus Rohrer Spirulina) on immunity and cancer growth by the University of Mississippi in the United States.

The US study found the quality of the polysaccharides are far better than those found in other commercial algae. used clinically for cancer immunotherapy.

The authors of the more recent Japanese studies concluded that "polysaccharides from edible algae are important bio-resources for regulating inflammation in allergic responses and immune responses against tumours".

NAC found in Spirulina an important metaboliser

Recently, N-Acetyl Cysteine (NAC) has also been identified as one of the important nutrients found in Marcus Rohrer Spirulina ®. In scientific studies, it's been established that NAC :

- Protects the body from acetaminophen (paracetamol) poisoning
- Is effective at treating liver failure
- Effective at removing heavy metals like lead, mercury and arsenic from the body.

NAC is thought to be a better method of boosting cellular glutathione levels, which are known to aid in the transport of nutrients to the body's lymphocytes and phagocytes.

Note from the publisher: Further investigation of the potential of Spirulina and its constituent pigment C-phycoerythrin is encouraged by the authors; in the meantime, the authors of this booklet suggest that individuals with health concerns in the four areas reviewed in this paper consider daily supplementation with Spirulina.

The latest scientific evidence points to:

- Potent immune stimulating effects
- Anti-viral activity against a variety of harmful viruses
- Promise as a cancer preventative agent and in the treatment of tumours
- Cardiovascular benefits including improvement of blood lipid profiles, prevention of atherosclerosis, and control of hypertension

References are available upon request from OTC Pharma SA (info@otcpharma.co.za).



Lifestyle plan and healthy meal suggestions

Top 10 healthy lifestyle tips

1. Balance blood sugar levels – avoid stimulants and sugar.
2. Eat natural and whole food – avoid over processed food.
3. After 3pm, make veggies your carbs – have oatmeal, rye bread, brown rice, sweet potatoes, fruit, and quinoa early in the day and salads and steamed vegetables later
4. Eat good fat, especially Omega-3-rich food.
5. Keep your dinner lean – protein and greens.
6. Eat balanced snacks and meals. Eating wholesome carbs, protein and fat at every meal keeps blood sugar levels from spiking and crashing. This controls energy levels and keeps cravings at bay.
7. Eat & drink food for the soul – in moderation.
8. Drink water. Stay away from chemical and artificial drinks.
9. Sleep for at least 7 – 8 hours every night.
10. Focus on resistance training 3-4 times a week.

Lifestyle plan and healthy meal suggestions

Upon waking:

A mug of hot water and the juice of ½ a lemon with five Spirulina tablets

Breakfast:

½ cup rolled oats with some berries or grated apple with cinnamon and a little honey

Or:

1 chopped apple or pear; 15 almonds (raw with skins); 100g fat-free; plain yoghurt or cottage cheese; some cinnamon for sprinkling.

Or:

1 slice of rye; some fresh tomato; a boiled egg or some cottage cheese.

Lunch:

5 Spirulina tablets; grilled or baked fish or tinned tuna served with a large mixed salad of your choice; 1tbs of cold pressed olive oil to drizzle over salad as a dressing.

Or:

Quinoa or sweet potato with a large raw salad and some vegetables.

Snack:

Hummus and veggies

Or:

Apple with 15 raw almonds or a tablespoon of sugar-free natural peanut butter.

Dinner:

Large raw salad and cooked vegetables with 120g of a lean protein of your choice (ostrich, fish, chicken, or a healthy egg white omelette) with vegetables - add 1 tablespoon of cold pressed olive oil.

Top eating guidelines for a healthy lifestyle:

- Never mix a protein and starch. Have starch with vegetables or protein with vegetables.
- Wait at least four hours between meals
- One fruit at a time and avoid fruit salad as this causes bloating.
- All food must be fresh, not pre-packed.
- Always use cold-pressed olive oil.
- Keep your evening meal light.
- Have a treat once a week only.
- Reduce salt intake and use fresh herbs to season food.
- Buy organic or free range milk and animal products.
- Use parsley, it's a blood purifier and helps eliminate water.
- Vegetable juices are great - have at least one a day.
- Snack on raw unsalted nuts or seeds with fruit.
- Cook with fresh herbs or add them to food.



Marcus Rohrer Spirulina® certifications and checklists



Certification By International Organizations

Spirulina has gained recognition as the best gift of Mother Nature by a number of National and International organizations the world over.

The UNO (United Nations Organization)

In the year 1974, during its World Food Conference declared Spirulina "the best food for tomorrow".



The WHO (World Health Organization)

It has called Spirulina as "the greatest super food on earth".



The NASA

The NASA scientists have found during research that 1 kg of Spirulina nutritionally equals to 1000kgs of the assorted vegetables.



TO WHOM IT MAY CONCERN MARCUS ROHRER SPIRULINA

- ✓ 100% Pure All Natural Hawaiian Spirulina
- ✓ FREE of Preservatives
- ✓ FREE of Damaging Toxins
- ✓ FREE of Pesticides
- ✓ FREE of Herbicides
- ✓ FREE of Caffeine
- ✓ FREE of Stimulants
- ✓ FREE of Gluten
- ✓ FREE of Yeast
- ✓ FREE of Sugar
- ✓ FREE of Artificial Colorants
- ✓ FREE of Salmonella
- ✓ FREE of Staphylococcus
- ✓ FREE of E. Coli
- ✓ FREE of irradiation
- ✓ FREE of Animal Ingredients
- ✓ FREE of Ingredients Of Bovine Origin (BSE-FREE)
- ✓ FREE of Alcohol

Manufactured in accordance with **Good Manufacturing Practices (GMP)** promulgated under the Federal Food, Drug, and Cosmetic Act and according to local and State of Hawaii regulations and certified with **ISO 9001-2000**.

Certified **Kosher and Halal** according to the official guidelines.

Natural **non-GMO** blue-green algae product containing no additives of any kind.

Classification

Spirulina Pacifica. is a dried and non-viable product of the common blue-green algae, *Arthrospira platensis* (formerly referred to as *Spirulina platensis*). This species is classified as follows:
 Family: Cyanobacteria
 Order: Oscillatoriales
 Genus: *Arthrospira*
 Species: *platensis*

10-6-2009

Marcus Rohrer Spirulina® : An ancient food for the modern world

Notes

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