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VECTOMEGA®

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VECTOMEGA® Up to 50X More Absorbable than Regular Fish Oil

The Choice for Customer Compliance

1. Super concentrated dosage - one tablet daily
2. Whole food omega fatty acid complex
3. Super bioavailability through phospholipids
4. No fish aftertaste

Why do customers prefer Vectomega?

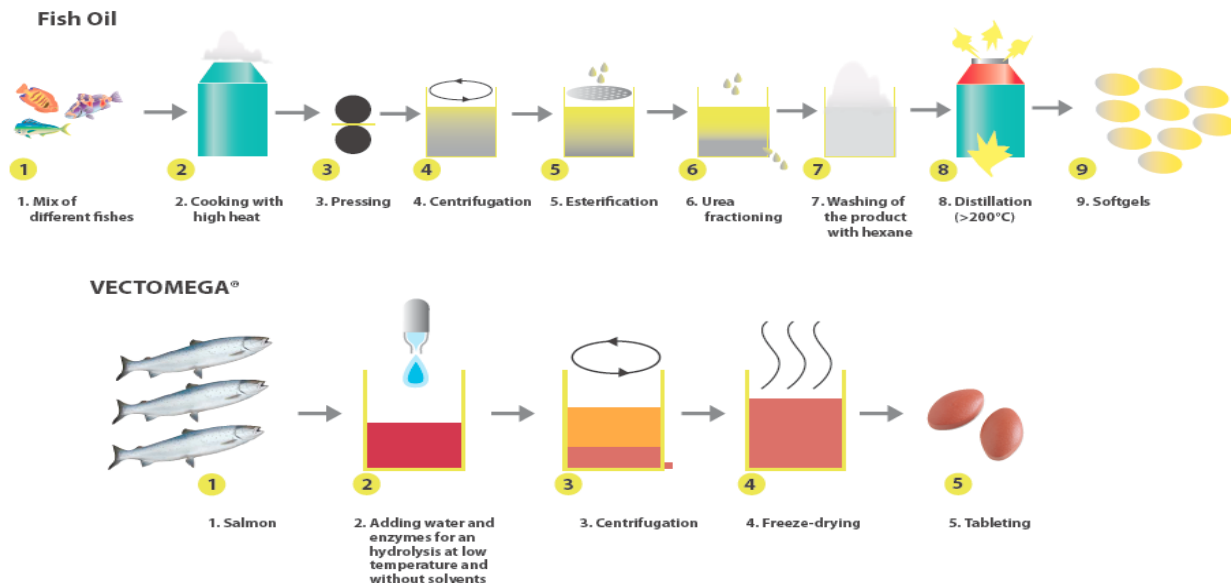
Vectomega® is the ideal choice for customers who need the benefits of omega fatty acids but struggle with compliance when using traditional fish oil products. Unlike purified,

refined, chemically altered fish oil products, Vectomega contains a complex of omega fatty acids and phospholipids in their natural state. No heat, pressure, or solvents are used. Instead, a patented, gentle cold water and enzyme process is used to extract naturally occurring marine phospholipids with the omega-3 fatty acids, EPA and DHA.¹

Historical Background

Vectomega is the end result of a French government research project. In 2001, the French government, in conjunction with National Interprofessional Office for Sea Products

and Aquaculture, asked researchers throughout France to investigate potential uses of marine by-products and accessory catches. This governmental research project gave rise to the Vectomega manufacturing process.



ess, which extracts marine phospholipids complexed with EPA and DHA from salmon heads, a by-product of the fishing industry. The active matter in this product, which we call *phospholipo-protein* compound from salmon heads, is extracted according to a unique patented process (using no heat, no chemicals and no solvents).

Superior bioavailability means a smaller dosage and less for patients to swallow

Comparison testing using the Caco-2 model verified that Vectomega raises intracellular levels of the beneficial omega fatty acids almost 50 times higher than traditional fish oil (see chart page above).^{2,3} A 50-fold increase in overall absorption allows for once a day dosing, using only one or two tablets for optimal health benefits.

Natural and Stable = No Reflux

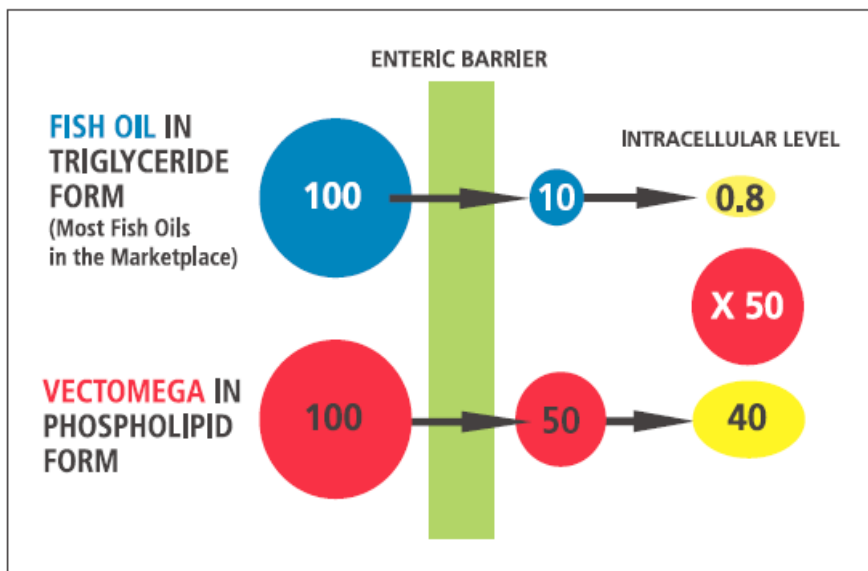
Because the essential omega-3 fatty acids are bound to phospholipids instead of triglycerides-as are typical fish oil-the fatty acids are also more stable and better protected from oxidation. This means no burping and stomach distress after taking the product. In fact, Vectomega is stable at room temperature for two to three years.

Clinical and Scientific Research

The benefits of omega fatty acid supplementation are well-documented in the scientific literature.

Vectomega is indicated for cardiovascular, brain function, cellular health, and anti-aging concerns.

A recent clinical trial assessed biological and clinical effects in 40 healthy volunteers. After 2 months of Vectomega supplementation (2 tablets daily), participants experienced support for healthy cholesterol levels and improvement in HDL cholesterol, as well as improvement in self-reported quality of life criteria (memory, concentration, reduction in occasional sleeplessness, and improvement in physical recovery). Tolerability was excellent, with no adverse effects re-



ported and 100% compliance.

Additional research has found benefits for Vectomega in improving waiting time (impulse control) in an animal model, as well as demonstrating the superior bioavailability of the phospholipids.

Bioavailability Testing

Intestinal permeability and accumulation of lipids in the cellular membranes were evaluated, comparing Vectomega and ordinary fish oil using the Caco-2 model. Intestinal permeability was low for the ordinary fish oil-less than 10%, while Vectomega was approximately 5 times better absorbed (50% absorption rate). Cellular status of omega

fatty acids was 50 times greater for Vectomega (see chart above).

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Phospholipids in Vectomega include:	
Phosphatidylcholine (PC)	Growth and regeneration. Assists in the introduction of DHA into the heart muscle. Protects mitochondria from oxidative damage, decreasing the impact of auditory and visual aging.
Phosphatidylethanolamine (PE)	Combined with PC, helps in the building of the myelin sheath and the astrocyte development of synapses it is strongly concentrated around the medullar motoneurons.
Phosphatidylserine (PS)	The most widespread of all membrane PLs, provides broad spectrum brain support.
Phosphatidylinositol (PI)	Has a major role as a precursor of intracellular signal molecules. Acts on the regulation of cellular calcium. Has a positive impact on mood, brain and heart health.
Sphingomyelin (Sph)	The most widespread of all membrane PLs, provides broad spectrum brain support.

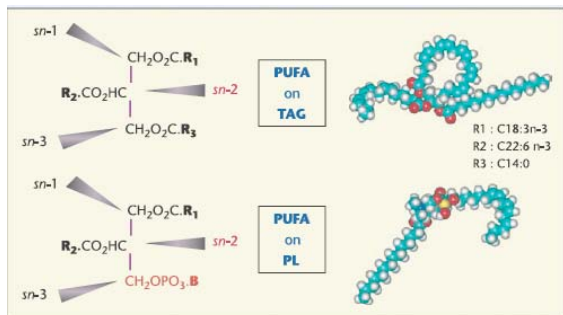
REVOLUTIONARY OMEGA-3 SCIENCE

100% Pure Salmon

The only species of fish used in the production of Vectomega is Atlantic salmon (*Salmosalar*). These fish are native to the cold waters of the North Atlantic Ocean. The salmon are contained in ocean fjords in Norway and Scotland. Fjords are narrow inlets of water between steep cliffs. Special marine-friendly nets at the ends of the fjords prevent the salmon from leaving the fjord. Because the population is managed, there is no danger of overfishing, yet the fish have all the advantages of ocean life – fresh, clean water, and natural diets. No part of the salmon is wasted – the head tissue (rich in phospholipids) is used for Vectomega, and the rest of the body is filleted for food. The entire process is completely sustainable and responsibly managed.

Production

All Omega-3 fish oils on the market have some level of processing that disrupts the natural arrangement of the essential fatty acids, and reduces their ability to be absorbed. Fish must be pressed, heated, and/or exposed to solvents to draw the oil from the whole fish body. Vectomega is unique in that it is from the head of the salmon, which is rich in phospholipids. Phospholipids are very effective transporters of Omega-3 fatty acids (EPA and DHA), and



Comparative structure of TAG and PL

Attributes	Vectomega	Fish Oils
Causes Gastric Regurgitation (i.e. fish burps)	No	Often
Single Fish Source	Yes	Varies
Phospholipid Transport Enhanced Absorption	Yes	No
Enzyme and Coldwater Flush Extraction	Yes	No
Highly Concentrated, Single Tablet, Full Daily Dose	Yes	No
Highest Level (up to 50x) Intracellular Absorption EPA/DHA	Yes	No
Completely Bioidentical to EFA Structure in Salmon	Yes	No
No Toxins or Heavy Metals	No	Varies
Clinically Studied	Yes	Varies
Includes Inflammation Causing Arachadonic Acid	No	Varies
Proven Stability	Yes	Varies

research suggests that this form of Omega-3 fatty acid delivery provides more significant health benefits. Only natural enzymes and a cold water flush are used in the extraction process for Vectomega.

Vectorization

This patented, gentle, cold water and enzyme process is called Vectorization, and it is used to extract the naturally occurring marine phospholipids with the Omega-3 fatty acids, EPA and DHA.¹ No heat, pressure, or solvents are used in its production.

Phospholipids versus Triglycerides

Phospholipids (PL) form the membranes of cells. Their chemical structure is essentially a fatty acid, a phosphate group, and an organic molecule. A triglycerol (TAG) is glycerol with three fatty acids. Both phospholipids and triglycerides can act as carriers for omega fatty acids. However, Omega-3 fatty acids bound to phospholipids (Vectomega) have been shown in scientific research to have greatly enhanced bioavailability and

stability (less prone to rancidity) than fatty acids on triglyceride carriers.²⁻⁴

This may be due, in part, to the position of the fatty acid on the PL or TAG carbon carrier chain. During the processing of fish oil, exposure to heat, pressure and solvents alters the position of the fatty acids on the TAG carbon chain, redistributing them from the preferred sn-2 position to the less desirable sn-1, sn-3 positions. It is theorized that this redistribution is what has the greatest impact on absorption and utilization. It is true that Omega-3 fatty acids are absorbed from fish oil; hence, the excellent medical studies. However, *several grams* must be used on a regular basis to achieve results, because triglycerides are such ineffective transport mechanisms.

When EPA or DHA is located in the sn-2 position on the carrier chain, better effects have been reported than when found in the sn-1,3 positions.^{5,6} Since Vectomega is not subjected to harsh processing methods, the Omega-3 fatty acids remain in their original positions on the carbon chain (sn-2), which is in turn bioidentical to the positioning of

Omega-3 fatty acids in the human brain. This allows for a perfect match with how the body utilizes these important compounds. Greater absorption and bioavailability also means a much smaller dosage is required to yield health benefits.

Clinical Evidence

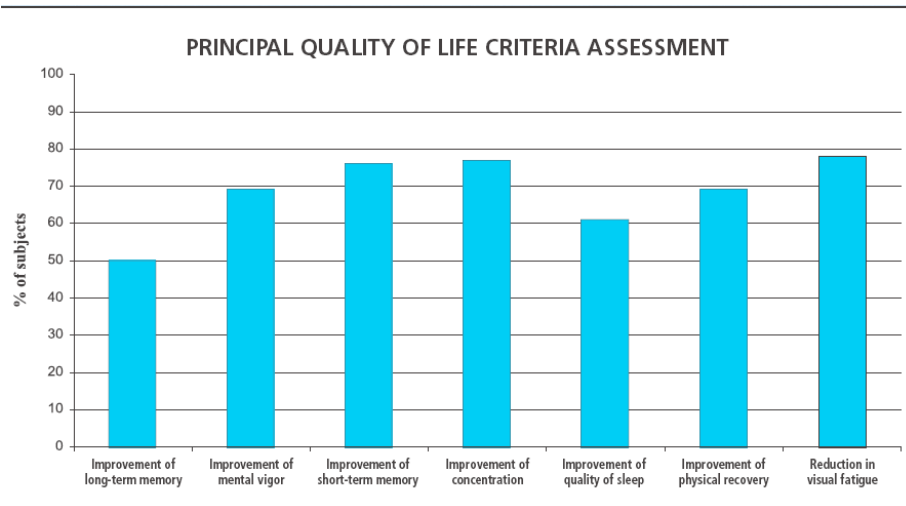
An in vitro study published in the *Journal of Neurochemistry* demonstrated that pre-treatment of brain neuronal cells with Vectomega's docosahexaenoic acid in a laboratory setting for 48 hours prior to exposure to substances known to cause neurodegeneration greatly reduced damage and increased brain cell survival. These results suggest that Vectomega improves neuronal membrane structure over time, as higher levels of Omega-3 fatty acids are incorporated into the cell, as well as phospholipid impact on the cell wall. The researchers conclude that "Such neuroprotective effects could be of major interest [in supporting long term brain health]."⁷

A human open clinical trial was recently concluded in Europe. In this study, 40 healthy people took two Vectomega tablets per day without any changes in their diet or usual exercise habits. After 60 days, the subjects experienced significant support in healthy total cholesterol, and a 13% increase in HDL levels. In addition, they reported significant improvement in several quality of life factors.

In comparison, traditional fish oil studies that have obtained similar results used a range of 3.6 g - 4 g or more of fish oil/day (equating to approx. 3,400mg a day of combined DHA and EPA). Therefore, it took over 50 times the amount of combined EPA/DHA from fish oil to achieve the same results as two tablets of Vectomega.⁸

Purity and Safety

Because the fatty acids in Vectomega are bound to phospholipids instead of triglycerides, they are much more stable. Rancidity is a common problem in fish oils, but not for Vectomega. Vectomega is



stable at room temperature for 2 to 3 years, and does not cause gastric upset or "fish burps" common to the use of commercial fish oils.

Certain contaminants are concentrated in the fat portion of fish; therefore, fish oils can bear an unusually high toxic burden.

Vectomega is not fish oil. However, each batch of Vectomega is tested for potential contaminants such as heavy metals, PCBs, organic pathogens, and other toxins. The metals for which Vectomega is analyzed are arsenic, beryllium, cadmium, lead, mercury and nickel. The results are verified by Inductively Coupled Plasma Mass Spectroscopy (ICP-MS). Vectomega exceeds all United States standards for purity, including the Council for Responsible Nutrition's specifications on heavy metals in fish oil, considered the benchmark for the industry.

Summary

1. Vectomega is a pure, whole food, natural source of Omega-3 fatty acids:
2. Up to 50 times greater absorption than triglyceride fish oils
3. Produced with enzymes and cold water – no heat, pressure, or solvents
4. Just one to two tablets per day
5. Natural form without chemical alteration or artificial enhancement

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