Whole Food Omega-3 DHA/EPA Complex Phospholipids – Hydrolyzed Peptides

Key Points:
• Clinically Proven
• Biologically Active Form as Found in Nature
• Only 1 to 2 Tablets Daily
• Patented Extraction Process
• No Heat
• No Chemicals

Key Applications:
• Cardiovascular Health
• Brain Function
• Cellular Health
• Anti-Aging*

V E C T O M E G A®
Up to 50 Times More Absorbable than Fish Oils

The Only Pure Natural Form of Omega-3 Fatty Acids from Salmon

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent disease.
**Vectomega®** is the first major advance in Omega-3 science in the last 30 years. The unique processes utilized in the creation of this product allows for a level of EPA and DHA absorption never before seen in the natural products industry. In fact, the Omega-3 fatty acids in Vectomega show intracellular absorption rates **50 fold higher** than fish oils. This extraordinary absorption is due to the unique, patented extraction method, completely different from fish oil products, used to produce Vectomega.¹

### 100% Pure Salmon

The only species of fish used in the production of Vectomega is Atlantic salmon (Salmo salar). 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 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.

#### Phospholipids in Vectomega include:

<table>
<thead>
<tr>
<th>Phospholipid</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphatidylcholine (PC)</td>
<td>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.</td>
</tr>
<tr>
<td>Phosphatidylethanolamine (PE)</td>
<td>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.</td>
</tr>
<tr>
<td>Phosphatidylserine (PS)</td>
<td>The most widespread of all membrane PLs, provides broad spectrum brain support.</td>
</tr>
<tr>
<td>Phosphatidylinositol (PI)</td>
<td>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.</td>
</tr>
<tr>
<td>Sphingomyelin (Sph)</td>
<td>The most widespread of all membrane PLs, provides broad spectrum brain support.</td>
</tr>
</tbody>
</table>

### Diagrams:

**Vectorization**

![Diagram of Vectorization](image)

**Fish Oil**

1. Mix of different fishes
2. Cooking with high heat
3. Pressing
4. Centrifugation
5. Esterification
6. Urea fractioning
7. Washing of the product with hexane
8. Distillation (>200°C)
9. Softgels

**VECTOMEGA®**

1. Salmon
2. Adding cold water and enzymes for an hydrolysis at low temperature and without solvents
3. Centrifugation
4. Freeze-drying
5. Tableting
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.  

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.

![Comparative structure of TAG and PL](image)

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. 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].”

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 of fish oil/day (equating to approx. 3,400 mg 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.  

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*THESE STATEMENTS HAVE NOT BEEN EVALUATED BY THE FOOD AND DRUG ADMINISTRATION. THIS PRODUCT IS NOT INTENDED TO DIAGNOSE, TREAT, CURE OR PREVENT DISEASE.
REVOLUTIONARY OMEGA-3 SCIENCE

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.

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

Summary
Vectomega is a pure, whole food, natural source of Omega-3 fatty acids:

- Up to 50 times greater absorption than triglyceride fish oils
- Produced with enzymes and cold water – no heat, pressure, or solvents
- Just one to two tablets per day
- Natural form without chemical alteration or artificially enhancement

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References
8. Arer M, Ducuit J. Assessment of biological and clinical effects of Vectomega among healthy volunteers. 2006; Clinique Médicale. Rennes et St Etienne, France.

www.EuroPharmaUSA.com