

# Understanding Marine Phytoplankton

The mysterious wonders of our oceans and marine life have remained elusive, even though they form 70% of our planet, have the most abundant life form, drive energy and nutrient cycling and create the base of all life on the planet.

Life on Earth exists from the magical play of the atmosphere, oceans and topsoil. Scientists at NASA theorize that about 3 ½ billion years ago, tiny microorganisms that inhabited our oceans formed the atmosphere and its topsoil. With their ability to convert energy, or light from the sun, water and minerals into essential nutrients (amino acids, carbohydrates, vitamins, etc) marked the beginning of life on Earth. These microorganisms or “vegetation” from the oceans made it possible for all other life forms to originate.

These microorganisms are commonly known as “algae” and “plankton” derived from a Greek root meaning “wanderer” or “floating life”. Besides producing enough gases to form our atmosphere, and enough micronutrients and minerals to form our topsoil, these tiny organisms are rich and nutritious enough to feed huge mammals, such as whales. Blue whales, bowhead whales, baleen whales, gray whales, humpbacks, and right whales all eat plankton. These mammals live between 80-150 years, and stay healthy, strong and sexually active throughout their lives

## Cellular Health and Energy

Jacques Cousteau once said, “The future of nutrition is found in the oceans.” What did he mean? How could the nutrients found in the ocean possibly be more beneficial than those found on land? To better understand the value of marine nutrients, we first must understand a few key principals about marine phytoplankton.

The micronutrients and electrolytes in plankton are exactly what human cell membranes need to carry out their metabolism. Not surprising, the composition of human plasma, or fluid surrounding cell membranes, is similar to sea water. Suboptimal nutrition and a constant lack in micronutrients adversely affect every function, structure, and detoxification of the human cell. Our metabolism will then suffer, leading to practically all diseases. Complete good nutrition will enhance the structure and function of all organs in our bodies.

*“The high density of nutrients found in algae, particularly Marine Phytoplankton is extremely important. Perhaps the most important is that these nutrients maintain human cell membranes in structure and function. This is vital for cell detoxification, and for overall metabolism of human cells. In fact, the causes of diseases have been simplified to every specific mechanisms, all of which center on cell membrane function and structure. Inflammation, Oxidation, Toxicity, and Mitochondrial dysfunction keep cell membranes from doing their job effectively. Algae contain high levels of antioxidants, and anti-inflammatory micronutrients to fuel metabolism and detoxification. They also stoke the fires of the Mitochondria, where cells make energy required to carry out their function. Of course, photosynthesis is the mechanism whereby plants in general and algae in particular, harness life-sustaining solar energy.” - Hugo Rodier, MD*

All energy ultimately comes from the sun. The sun’s energy is harnessed through direct contact and diet. Plants absorb the sun’s energy through photosynthesis and are later consumed by animals and humans, thus converting the sun’s energy. Marine Phytoplankton could be the most important super food available to harness solar energy and deliver essential nutrients. All cells work the same way and have the same energy needs, they have different functions and outputs. Our cells thus depend in all respects from the energy derived from the Sun. This energy is utilized from direct contact or the foods we eat.

"Cell communication" is how our 100 trillion cells coordinate their metabolism. They do this through a system of "messages". They form a vast network of communication. The psycho-Neuro-Immune-Endocrine system of cell communication to coordinate metabolism is now considered to be the cornerstone of Health ("The intricate interface between the immune system and metabolism", J. Trends in immunology 2004; 25:193.)

Cell communication takes place mainly in the outer cell membrane which makes it an extremely important part of cell communication and function. Cells are completely dependent on the environment in our bodies and if compromised cannot product energy effectively. When cell function is compromised there is a greater chance for disease. The high density nutrients found in marine phytoplankton show a vital role for cell detoxification and maintaining cell membrane structure and function. The micronutrients and electrolytes in marine phytoplankton are exactly what our cell membranes need to carry out their metabolism. Alpha3 CMP™ provides the required nutrients at a cellular level.

### **Processing and Manufacturing**

“**Alpha3 CMP™** (Concentrated Marine Phytoplankton) is a unique nutrient-rich blend of Marine Phytoplankton harvested from the pristine temperate coastal waters of the Pacific Northwest on Vancouver Island, BC. What makes these temperate waters an exceptional cauldron of life is the way in which ocean tides interact with fresh water, creating turbulence that draws even more deep water nutrients and supporting a diverse array of marine phytoplankton species. National Geographic, (Aug. 2006). The proprietary patent pending process harvests natural seawater, capturing the marine phytoplankton in million-liter tanks. **This is the only known product to take natural marine phytoplankton communities containing a complete suite of marine trace elements in proportion to those found naturally in human tissue.**”

*“Throughout this unique growing and harvesting process, quality control and testing is employed to ensure the highest quality product, providing assurance that no pathogens, toxins, heavy metals or contamination has occurred to the natural marine phytoplankton. The concentrated paste contains a variety of over **200 species** (primarily from the larger, nutrient-rich Bacillariophyceae classification commonly known as diatoms). Through the harvesting process the Company’s patent pending proprietary technology breaks down the cellular walls, separating the silicate walls and releasing the nutrients that are otherwise encapsulated. This process, unlike any other known to man today, makes the nutrients immediately bioavailable. The raw paste at this point contains approximately 85% water. It next goes to a state-of-the-art phytopharmaceutical production facility, licensed and certified GMP (Good Manufacturing Processes) by Health Canada, where it is further concentrated, passing through the highest standard quality assurance procedures (sanitized and stabilized) to certify Alpha3 CMP™ safe for human consumption.”*  
- Rowan Haigh, Scientific Director for Unique Sea Farms