

NovaSOL® Q

Scientific Inputs – Bio-availability



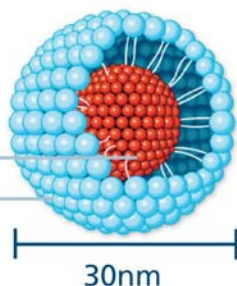
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NovaSOL® Q is the result of an advanced and patented formulation technology for nutritional products, i.e. the Solubilization – technology of AQUANOVA, Germany. NovaSOL® Q has a bio-availability 3.3 times (230%) greater than straight CoQ10 powder. This has been proven in the largest CoQ10 clinical bio-availability trial ever done. It could be clearly shown that NovaSOL® Q is superior not only to straight CoQ10 powder but also to all other CoQ10 supplements in the market. Bio-availability is a measure for the absorption of a nutrient or a drug. It expresses the rate at which a nutrient or drug is absorbed into the blood and/or cell. The best nutrient doesn't work if it doesn't arrive where it is needed. The better the bio-availability of a dietary supplement is the higher is its efficacy.

NovaSOL® Product micelle

Core (Coenzyme Q10)
Shell



CoQ10 is absorbed via the same pathway as other dietary fats. Because it is insoluble in water, it requires emulsification otherwise it would be excreted again. This is done by bi-carbonate and bile salts. The emulsified droplets are still too large for absorption. They have to drastically be downsized before they get micellized by bile salts. Once the micelles are smaller than 50 nanometers they have the right size for absorption. This physiological "pre-processing" is by no means quantitative, which means that considerable proportions of ingested Co Q10 cannot be absorbed. NovaSOL® Q, however, is pre-micellized, all micelles being smaller than 50 nanometers. They don't need any physiological "preprocessing". They directly and efficiently transport CoQ10 to the absorption sites in the small intestine.

Applications

NovaSOL® Q is available for a variety of applications:

- Dietary supplements
- Functional foods & beverages
- Crystal clear fitness & energy drinks
- Cosmetic creams
- Pharmaceutical products



Coenzyme Q10 (ubiquinone)

An ubiquitous nutrient

- Natural, lipophilic compound
- Located in the cell mitochondria
- Essential cofactor in the generation of energy (ATP)
- Strong physiological antioxidant
- Physiological synthesis starts to slow down beyond the age of 20 and drops dramatically beyond the age of 40
- Supposed benefits for heart



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Conventional CoQ10 supplements use either oil-based dispersions in softgels or powder-filled two piece capsules, both of which provide CoQ10 as large particles, which require “pre-processing” as described above.

This bears the following risks.

- Large lipid globules are adsorbed (trapped) by fibers in the stomach and small intestine. They are removed from the system and excreted. Considerable portions of nutrients can get lost that way.
- Not enough bile acids. If they are below CMC, the “Critical Micelle-forming Concentration, not all of the nutrient can be micellized, hence not be fully absorbed.
- Not enough pancreatic lipases, and sub-optimal intraduodenal pH. Micellation is strongly hampered All these risks are overcome with pre-micellized NovaSOL® Q.

Summary

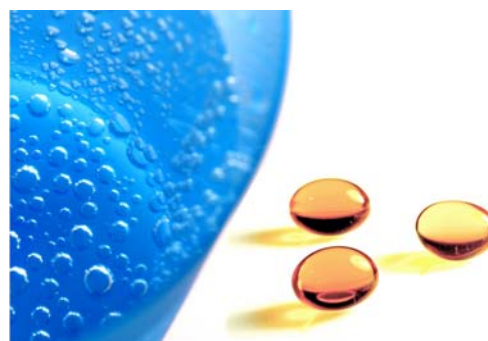
NovaSOL® Q is the best absorbable, hence the most efficacious CoQ10 in the market because

- It is pre-micellized and doesn't need any physiological pre – processing
- The micelles are all small enough (30 nm) to easily and quickly get to the site of absorption
- It has the best solubility of all CoQ10 – products. Solubility is directly proportional to bio – availability
- It is extremely pH-stable and not affected by the very acidic gastric conditions
- It is the only CoQ10 formulation which superior bio – availability has been proven in a systematic human clinical trial

Presentation

NovaSOL® Q is a high quality solution:

- Yellow-orange liquid (solubilisate)
- Bulk solubilisate in three grades
 - 3% beverage grade (in Germany only)
 - 22% basic grade
 - 5% capsule grade



NovaSOL® Q

Unique features of our high tech formulations are:

- Superior bioavailability
- Liquid and crystal clear
- Readily water soluble
- Readily fat soluble
- State of the art nano-solubilisation
- GRAS Status

Documentation & Samples

On request we will supply you with:

- Product data sheet
- Material safety data sheet (MSDS)
- Study reports
- Samples solubilisate

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AQUANOVA is a leading supplier of innovative and versatile formulations of food and cosmetic ingredients, nutrients and pharmaceutical actives with superior properties providing new application opportunities. AQUANOVA develops and produces nano structured liquid solubilisates (product brand "NovaSOL") utilizing its proprietary technology, and in close cooperation with renowned scientists. The solubilisates consist of nano-sized micelles with a diameter of 30 nm only, which are thermally, mechanically and pH stable, even in gastric acid. Owing to the special properties of these product micelles, the solubilisates allow for the development of novel innovative and pioneering dietary supplements, functional foods and beverages, cosmetic products and pharmaceuticals. The absorption (bio-availability) of the active substances from the solubilisates (product micelles) and hence the efficacy, is significantly increased and optimized. In addition the solubilisates exhibit unique technical features and benefits such as superior anti-oxidative capacity for essential oils or pH-independent function of food preservatives. The company is headquartered in Darmstadt (near Frankfurt), Germany.

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