

Ascorbic acid Vs natural vitamin C

Ascorbic acid can legally be called vitamin C as legislated by the FDA, but is ascorbic acid the same as vitamin C? The ascorbic acid consumed as a food preservative and as a supplement is actually a synthetic and inert chemical isolate that is processed using a lengthy laboratory process. It can certainly be argued that synthetic and natural ascorbic acid have the same chemical structure, we do not dispute this. But the complete vitamin C molecule is so much more than just ascorbic acid.

'Ascorbic acid is an isolate, a fraction, a distillate of naturally occurring vitamin C. In addition to ascorbic acid, vitamin C must include rutin, bioflavonoids, Factor K, Factor J, Factor P, Tyrosinase, Ascorbinogen, and other components.'

'If any of these parts are missing, there is no vitamin C, no vitamin activity. When some of them are present, the body will draw on its own stores to make up the differences, so that the whole vitamin may be present. Only then will vitamin activity take place, provided that all other conditions and co-factors are present. Ascorbic acid is described merely as the "antioxidant wrapper" portion of vitamin C; ascorbic acid protects the functional parts of the vitamin from rapid oxidation or breakdown.'

(Somer p 58 "Vitamin C: A Lesson in Keeping An Open Mind"
The Nutrition Report)

Although all our vitamins are measured in their chemical isolate form, it is clear that foods are not just a mix of chemical isolates. And neither are its individual molecules.

A vitamin is: "... a working process consisting of the nutrient, enzymes, coenzymes, antioxidants, and trace minerals activators."

Royal Lee "What Is a Vitamin?" Applied Trophology, Aug. 1956

So how is the ascorbic acid produced that acts as a preservative and goes into any supplement containing ascorbic acid?

How does a nutrient that is so volatile that it is destroyed by heat, pressure, exposure to oxygen, sunlight and many other natural elements, become stable enough to be commonly used as a preservative?

The answer is by synthetically manufacturing it in a laboratory into an inert chemical isolate. If it is not alive, it cannot be so easily destroyed.

"Natural food-source vitamins are enzymatically alive. Man-made synthetic vitamins are dead chemicals. "

DeCava – The real truth about vitamins

How ascorbic acid is produced - The Reichstein process

Ascorbic acid is produced through a process developed 80 years ago called the Reichstein process. This process is still used today for nearly all the ascorbic acid produced across the world, aside a few changes such as the use of GMOs and wide ranging solvents and other chemicals.

These are the key steps:

Raw material is corn syrup (mostly from GMO sources)

Hydrogenation of D-glucose to D-sorbitol (nickel is used as a catalyst). This is done under high temperature and high pressure.

Oxidation of sorbitol to L-sorbose (often GMOs are used in this process (see study below))

L-sorbose is combined with acetone at low temperature.

Further oxidation forming l-Gluconic acid.

Gluconic acid is treated with hydrochloric acid using hydrolysis to form crude ascorbic acid

The final process involves filtration, purification & milling to produce the fine ascorbic acid powder found in all products containing ascorbic acid.

"Synthetic vitamins: these are highly inferior to vitamins from natural sources, also the synthetic product is well known to be far more toxic."

Dr. Casimir Funk (discoverer of thiamine)

GMOs are the new dawn of ascorbic acid production. This is the latest of many similar studies.

Metabolic engineering of the fungal D-galacturonate pathway for L-ascorbic acid production

Microbial Cell Factories, 2015

<http://www.biomedcentral.com/content/pdf/s12934-014-0184-2.pdf>

Living Nutrition has produced this fact sheet exclusively for professional use only. It should not be shown or distributed to the public. Information in this factsheet is intended for educational use only and is not intended to aid the treatment, prevention or diagnosis of any disease.