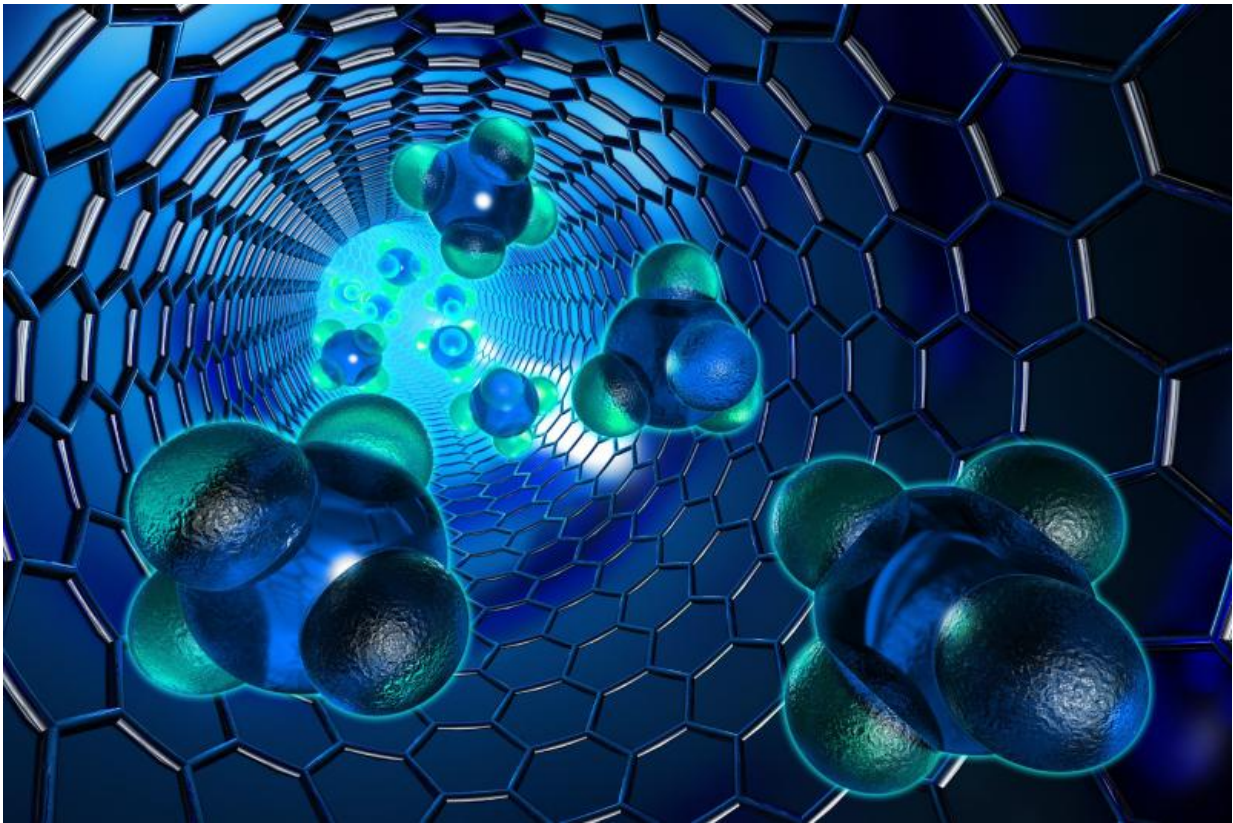


Nanocapsule able to protect nutrients in beverages and food supplements

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Researchers at the National University of Mexico (UNAM) developed a nanostructured system capable of protecting the active compounds of juices and nutritional supplements from high temperatures during the

pasteurization process in order to retain their nutritional properties.

Nanotechnology researcher Maria de la Luz Zambrano Zaragoza explained that the benefits of the development include maintaining [natural compounds](#), and that what you read on the label is really present during the storage time of the product before its expiration date.

The research began in 2007 with the study of beta-carotene, a pigment found in plants, fruits and vegetables that can be used as an antioxidant.

"The aim was to determine if by placing a protective layer around the beta-carotene, it retained more nutritional properties during pasteurization. So we designed nanocapsules measuring less than 500 nanometers, and made a gum-like model that has a liquid center. In our case, the gum wall is a biodegradable polymer that protects the liquid center—beta carotene," said the researcher.

These nanocapsules can be added to commercial drinks. Consumption has no contraindications, because it prevents interaction with the cellular system. Besides being composed of a [biodegradable polymer](#), it becomes a lactic acid and can easily be discarded.

"We tested it in orange, strawberry and watermelon juice at 70 and 90 degrees Celsius, then we quantified the beta-carotene in the samples and found that degradation is minimal, we had a loss of only 30 percent compared to the traditional loss of about 50 to 60 percent," she said.



In addition to improving retention of beta-carotene in thermal processes, the use of nanocapsules can be applied to other antioxidants in processes such as sterilization or UHT.

This process is patent pending. The benefit obtained by using the nanostructured food system is reduced usage of active substances

normally required during production, resulting in less product degradation by the effect of environmental conditions.

Provided by Investigación y Desarrollo

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