

Nanotechnology behind scenes: New approaches of tomafran-nanodevices

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We are currently in a new scientific era, “the age of nanotechnology”. The latest scientific, biomedical and technological advances, such as the recent SarSCOV2 vaccines, new aerospace materials and even everyday household appliances such as televisions are incorporating nanotechnology to improve their efficiency and, above all, to improve our quality of life. One of the most widespread uses of nanotechnology focuses on the encapsulation, stabilization and vectorization of compounds in order to increase the efficacy of many active molecules such as terpenes, alkaloids and apocarotenoids among others. Tomafran is a new genetically modified tomato variety that produces a high level of saffron-like apocarotenoids such as crocin, picocrocin and crocetin. Despite the broad utilities and functions of its extract, as a nutraceutical and cosmeceutical ingredient, its use may be limited by numerous biological barriers, such as the blood-brain barrier or the skin barrier. The Bioforce research group and the spin-off Naplatec have developed different nanotechnological approaches to improve the efficacy of tomafran extract activity. In this presentation we will take a long tour through the different applications of tomafran with the enhancement of its activity through novel nanodevices.

