African Journal of Food Science and Technology (ISSN: 2141-5455) Vol. 12(7) pp. 01-02, July, 2021
DOI: http:/dx.doi.org/10.14303//ajfst.2021.036
Available online @https://www.interesjournals.org/food-science-technology.html

Commentary

Nanocapsules to improve bioavailability of neutraceuticals in standard ingrediants

Javier Pedro*

Environmental Monitoring and Electro Analytical Chemistry University of Lagos, Lagos, Nigeria

E-mail: Pedroj862@gmail.com

Abstract

This chapter is primarily a discussion and analysis of chosen nanoparticle and nanocapsule formation processes that the author believes are appropriate for the food, drinkable and nutraceutical trade. The interrelation of nanocapsule properties required for delivery of food ingredients and orally administered prescription drugs is noted.

Keywords: Nanocapsule, Nanocarrier

INTRODUCTION

We have designed a nanocarrier with a mix of natural polymers (CS-SA) and supermolecule (OL) for the delivery of the xanthophyll. Xanthophyll may be a hydrophobic inhibitor antioxidant with proved retinal and macular protection against aerophilic stress. However, low binary compound solubility and bioavailability limit its clinical application (Thies C 2012). Hence, focus of the study was to enhance the solubility and bioavailability of xanthophyll by employing a chitosan-oleic acid-sodium alginate-based nano-carrier system (LNCs). In recent times, phytochemicals encapsulated or conjugated with nanocarriers for delivery to the precise sites have gained sizable analysis interest (Veeresh T et al., 2020).

Phytochemicals are principally plant secondary metabolites that reported to be useful for human health and in illness theraphy (Ahmad R et al., 2021). However, these compound are massive size and polar nature of those compounds, build it troublesome to cross the barrier (BBB), epithelium lining of blood vessels, channel and mucous membrane (Garg T et al., 2017). Moreover, they're enzymatically degraded within the channel. Food parts and neutraceuticals are additional prone towards chemical, physical or biological degradation. A comprehensive vary of mixture delivery systems are accessible for consumption within the food trade to capture, protect, and deliver food ingredients yet as nutraceutical parts (Oluwaseun C. et al., 2021). The applying of nanoceutical has been highlighted as a replacement paradigm shift that might facilitate within the manipulation of properties of gear on the brink of the molecular level. They may conjointly facilitate in encapsulation and delivery of gear to focus on sites yet as increase the bioavailability of phytochemicals, heighten the enjoyment of flavors, incorporate medication nanoparticles into food, increase the longevity/stability of the merchandise, and enhance the food storage (Saraf AS 2010).

The range of novel seasoner formulations like chemical compound nanoparticles, nanocapsules, liposomes, phytosomes, nanoemulsions, microsphere, transferosomes, and ethosomes has been reported victimisation bioactive and plant extracts. The novel formulations are reported to possess outstanding benefits over typical formulations of plant actives and extracts that embrace sweetening of solubility, bioavailability, protection from toxicity, sweetening of medical specialty activity, sweetening of stability, improved tissue macrophages distribution, sustained delivery, and protection from physical and chemical degradation. Engineering science has many applications in food trade and it considerably helps in characterization, fabrication, and manipulation of nanostructures. The nanostructures improve the solubility of food ingredients in vivo, at the side of sweetening in their bioavailability and controlled unharness at the target web site. These nanostructures conjointly function anticaking agents, nano-additives, delivery systems for nutraceuticals, etc. Except for achieving property food production, different challenges related to food systems are shifting dietary trends, want for naturalness, price effectiveness, and label friendliness. The issues related to food systems are exacerbated by excessive uses of pesticides, fertilizers, and plastics at the side of food losses and wastes that occur at completely different stages of the food worth chain. Of the various approaches for the treatment of cancer, growth and also the further promotion of necrobiosis in cancer stem cells by victimisation combinatorial medical aid is typically the foremost counseled.

REFERENCE

Thies C(2012). 8 - Nanocapsules as delivery systems in the food, beverage and nutraceutical industries. p. 208-225

Veeresh T, Naveen J, Baskaran V(2020). Chitosan-oleic acid-sodium alginate a hybrid nanocarrier as an efficient delivery

system for enhancement of lutein stability and bioavailability. Int J Biol Macromol. 150: 578-594.

Ahmad R, Srivastava S, Ghosh S, Khare SK(2021). Phytochemical delivery through nanocarriers: a review 197: 111389.

Garg T, Sharma G, Rath G, Goyal AK(2017). 18 - Colloidal systems: an excellent carrier for nutrient delivery. p. 681-712

Oluwaseun C, Osikemekha A, Olugbenga AA, Michael S(2021). 25 - Application of nanoceutical technology for fast and efficient control of illness. Phytochemistry, the Military and Health. p. 497-508.

Saraf AS(2010) Applications of novel drug delivery system for herbal formulations. Fitoterapia. 81: 680-689.