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Perspective

Appraoch of food science and agriculture through liposomal nanocapsules

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Abstract

Liposomes, which are spherical bilayer vesicles formed by dispersing polar lipids in aqueous solvents, have been extensively researched for their ability to act as drug delivery vehicles by sheltering reactive or sensitive substances before to release. Liposome entrapment has been proven to protect encapsulated, bioactive materials from a variety of environmental and chemical changes, including enzymatic and chemical alteration, as well as buffering against variations in pH, temperature, and ionic strength. Liposomes have shown to be particularly effective as models of biological membranes in both eukaryotes and prokaryotes in investigations of numerous physiological processes. Pharmaceutical and therapeutic encapsulation, cosmetics, anti-cancer and gene therapy medications are all examples of industrial applications.

Keywords: Liposome, Physicochemical, Entrapment, Microbes.

INTRODUCTION

Liposomes have been utilised in the food business to provide food flavours and nutrients, and they've lately been studied for their ability to include food antimicrobials that could help protect food products from spoiling and harmful microbes. We analyse competing liposome production methods and briefly introduce essential physicochemical features of liposomes in this paper. Liposomes are used in a variety of non-agricultural and food applications. Finally, a full, up-to-date overview of liposomes' expanding use in the food sector as delivery vehicles for nutrients, nutraceuticals, food additives, and food antimicrobials is offered (Merkoci, 2010).

Liposome nanoparticles have been investigated for their ability to encapsulate natural metabolites that may aid to prevent food from rotting and deterioration in a variety of food industry procedures. Liposomes, which are spherical bilayer vesicles formed by dispersing polar lipids in aqueous solvents, have been extensively researched for their ability to act as drug delivery vehicles by sheltering reactive or sensitive substances before to release. Liposome entrapment has been proven to protect encapsulated, bioactive materials from a variety of environmental and chemical changes, including enzymatic and chemical alteration, as well as buffering against variations in pH, temperature, and ionic strength (Morones et al., 2005). Liposomes have shown to be particularly effective as models of biological membranes in both eukaryotes and prokaryotes in investigations of numerous physiological processes. Pharmaceutical and therapeutic encapsulation, cosmetics, anti-cancer and gene therapy medications are all examples of industrial applications (Kraft et al., 2014).

Liposomes have been utilised in the food business to provide food flavours and nutrients, and they've lately been studied for their ability to include food antimicrobials that could help protect food products from spoiling and harmful microbes. We analyse competing liposome production methods and briefly introduce essential physicochemical features of liposomes in this paper. Liposomes are used in a variety of non-agricultural and food applications. Finally, a full, up-to-date overview of liposomes' expanding use in the food sector as delivery vehicles for nutrients, nutraceuticals, food additives, and food antimicrobials is offered.

Nanotechnology has emerged as one of the most promising technologies for transforming traditional food science and industry. In food systems, nanotechnology-assisted processing and packaging has proven its worth. Nanoparticles with various physical qualities might be produced using various preparation technologies, and hence could be employed in food.

However, not only is the public's perception of this new technology shaky, but regulatory body have yet to reach a consensus on globally applicable laws. Despite considerable debate over the need for new nanotechnology regulations, the US Environmental Protection Agency, the National Institute for Occupational Safety and Health, the Food and Drug Administration (FDA), the European Commission's Health and Consumer Protection Directorate, international organisations such as the International Organization for Standardization and the Organization for Economic Cooperation and Development, as well as international organisations such as the International Organization for Standardization and the Organization for Economic Cooperation and Development, and international organisations such as the International Organization for Standardization and the Organization for Economic Cooperation and Development (Wan et al., 2014).

As evidenced by published precedent, liposomes offer enormous promise in the food, beverage, and nutraceutical industries. The usage of liposomes in the food sector is primarily for texture modification and improved water retention. Liposomes can encapsulate a variety of ingredients, including taste enhancers, preservatives, and antimicrobials, resulting in improved flavour and bioavailability. Liposomes are ideal for the food sector since they are non-toxic, biodegradable, and adaptable systems for both hydrophilic and hydrophilic components.

REFERENCES

Merkoci A (2010). Nanoparticles-based strategies for DNA, protein and cell sensors. Biosens Bioelectron. 26: 1164–1177.

Morones JR, Elechiguerra JL, Camacho A, Holt K, Kouri JB, Ramírez JT, Yacaman MJ (2005). The bactericidal effect of silver nanoparticles. Nanotechnol. 16: 2346–2353.

Kraft JC, Freeling JP, Wang Z, Ho RJY (2014). Emerging Research and Clinical Development Trends of Liposome and Lipid Nanoparticle Drug Delivery Systems. J Pharmaceutical Sci.103:29-52.

Wan C, Allen TM, Cullis PR (2014). Lipid nanoparticle delivery systems for siRNA-based therapeutics. Drug Deliv Transl Res. 4: 74-83.