Stability of iron in niosomes and conditions acid

[1]**Espinosa Andrews, H.** and [2]**García Márquez, E.**

Center for Research and Assistance in Technology and Design of the State of Jalisco, A.C. [1]Arenero street 1227, The Bajío, 45019 Zapopan, Jal. And, [2]Mty-Aeropuerto Highway, Innovation street 404, PIIT Park, 66628 Cd Apodaca, N.L.

The iron is a chemical element that meets diverse biological functions. However, the lack of absorbable iron remains a limitation to maintain human health in the whole world. The deficiency has been attributed to iron stability. During the digestive process, the iron oxidate fast, the Fe2+ to Fe3+, in aqueous solution. Non-ionic surfactant-based vesicles are formed from the self-assembly of non-ionic surfactants resulting in bilayer structures, known as niosomes. These structures are able to retain ions and serve as encapsulation agents. The aimed of these work was the production of niosomes to reduce the oxidation of iron. The niosomes were obtained using a non-ionic surfactant as a stabilizer. A 2k response surface design was used to evaluate the effect of the formulations on the encapsulation efficiency and average particle size. Cholesterol: 360 and 540

□mol/mL, ferrous sulfate: 10 and 40 mg/mL and, molar proportion cholesterol-stabilizer 1:1 and 1:2. Niosomes with ferrous sulfate showed particle sizes smaller than 350 mm. Niosomes were stable under several pH conditions and temperature range. The niosomes were dispersed in a gelatin hydrogel. The addition of niosomes to gelatine does not modify the rheological properties of the gelatine. The ferrous ion contained in niosomes and in the hydrogel was stable during the 30 days a 4°C.

Biography

García Márquez has completed his PhD at the age of 48 years from Metropolitan Autonomous University and postdoctoral studies from the Center for Research and Assistance in Technology and Design of the State of Jalisco, A.C. He is a senior researcher "A", a premier food technology service organization. He has published more than 12 papers in reputed journals and has been serving as an editorial board member of the journal Research and Development in Science and Technology of Foods (DCyTA). http://www.fcb.uanl.mx/IDCyTA/