Selen Guner et al., J Food Process Technol 2015, 6:8
http://dx.doi.org/10.4172/2157-7110.S1.024

OMICS International
conferenceseries.com

4th International Conference and Exhibition on
Food Processing & Technology
August 10-12, 2015 London, UK

Effect of different homogenization techniques on the particle size of liposomes and storage characterization by NMR Relaxometry

Selen Guner and **Mecit Halil Oztop**
Middle East Technical University, Turkey

Liposomes are double-layered spherical vesicles made up of polar lipids and could be used in pharmaceutical, personal care, chemical and food industries to encapsulate both hydrophobic and hydrophilic compounds. Being biodegradable, biocompatible not having any toxic effects and having the ability to release the active agents when desired make these systems advantageous for many applications. The main natural sources used for liposomes are egg and soy. In this study, egg and soy lecithin with higher purity (>70%) and a commercially sold soy lecithin was used to determine the effect of different homogenization methods on the particle size of liposomes. Microfluidization, ultrasonic probe and ultrasonic bath methods were used. Microfluidization gave the smallest particle size results. Prehomogenization speed after 20, 000 rpm is found to have no significant effect on final particle size ($p<0.05$). Effects of microfluidization pressure and solution type on particle size were also investigated. Trials were conducted between 300-1300 bars and either distilled water (pH≈7) or acetate buffer (pH≈3.8). Effect of solution type on particle size was found significant. For the long term stability, the samples were stored at refrigerator and room temperatures (4°C & 25°C) and NMR T2 Relaxometry experiments were conducted during storage. The T2 values decreased during storage. Liposomes prepared from commercial lecithin had the lowest T2, supporting the idea that it was not pure and had higher concentration of lipids.

Biography

Selen Guner is a MS student studying emulsion systems at Middle East Technical University (METU). At the same time, she is working as Research Assistant at METU, where she completed her BS in 2013. She is also interested in alternative laboratory techniques to teach everyone food science with catchy experiments.

seguner@metu.edu.tr

Notes: