ABSTRACT FOR PARALLEL SESSIONS

S1-F01

Preparation and Evaluation of Olive Oil Nanoemulgel

Nagib A. Elmarzugi
Institute of Bioproduct Development (IBD), Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia

Abstract
The aim of this study was to characterize nanoemulgel prepared using olive oil and sucrose ester as surfactant. Nanoemulsion is submicron sized emulsion typically in the range of 20-200 nm. Nanoemulgel has emerged as a promising drug delivery of hydrophobic drugs. When hydrogels and emulsions are used in a combination, thus the dosages will be referred as emulgel. Olive oil is often used in herbal skin care. The nanoemulgels were prepared by nanophase emulsification technique. These formulations were examined using zetasizer to determine the mean diameter of dispersed oil droplets, size distribution and zeta potential. Also the stability hydrogel were studied at different storage temperature 4, 25 and 40 °C. The results revealed that nanoemulsion prepared with 50% w/w oil, 30% w/w glycerol and 20% w/w surfactant showed droplets size below 200 nm with good size distribution below 0.2 and zeta potential < -30 mV. The optimum formulation of nanoemulsion was prepared in the form of nanoemulgel using carbopol 940. The results showed no significant effect of carbopol on the nanoemulsion droplets size and zeta potential after incorporating the nanoemulsion with the hydrogel. In addition, the nanoemulgel showed high stability at different storage temperature. In conclusion, a stable olive oil nanoemulgel was prepared by incorporating nanoemulsion with carbopol based hydrogel.

Keyword: Nanoemulgel, Oil Droplets, Size Distribution, Zeta Potential