Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **30** (2): 289-96 (2011)

Original Article

Received: April 29, 2010
Accepted: June 21, 2010

Formulation Study of Quercetin-Loaded Lipid-Based Nanocarriers Obtained by Hot Solvent Diffusion Method

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***SUMMARY*. Lipid-based nanocarriers were prepared by hot solvent diffusion technique. Tristearin (TS) and/or castor oil were employed as oily phase, and Lutrol F68® or Solutol HS15® and lecithin were employed as surfactant and cosurfactant, respectively. The influence of the formulation variables on surface charge and size of the nanocarriers and their ability to load and control the release of quercetin were investigated. Solid lipid nanoparticles, nanostructured lipid carriers, nanoemulsions, and microemulsions (ME) were obtained depending on the formulation composition. Querecetin (QU) entrapment efficacy was higher than 99 % for all formulations. However, drug content was greatly affected by the formulation composition. ME exhibited the highest capacity to load QU, reaching a concentration around 1,300 times higher than its aqueous solubility. QU release profiles exhibited biphasic kinetics for all formulations. However, the release rate of QU was affected by the properties of the nanocarrier.**

KEY WORDS: In vitro drug release, Lipid-based nanocarriers, Quercetin.

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