Investigation of solubility an antihistamine drug (Loratadine) in supercritical carbon dioxide + Ethanol

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Abstract

Obtaining the solubility data of drug components in supercritical carbon dioxide (SC-CO_2) along with cosolvent is essential for the design of process of a nanoparticle drug. In this study, solubility of loratadine in supercritical carbon dioxide (SC-CO_2) was measured in temperature and pressure ranges of (308–338) K and (12–27) MPa, respectively, for ternary systems (loratadine+CO_2+ethanol). Mole fractions were determined using a static method. In addition, the solubility of loratadine was correlated to empirical and semiempirical density-based models. The solubility results from this research would be helpful in the selection of supercritical fluid method for production of loratadine micro and nanoparticles.

Keywords: Loratadine, SC-CO_2, Ethanol, Semiempirical equations