World Applied Sciences Journal 2013 vol.24 N7, pages 920-927

A calorimetric study of the formation of phenacetin solid dispersions with PEG-1400 and pluronic F127

Gerasimov A., Ziganshin M., Gorbatchuk V.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The formation of solid dispersions is one of the methods of drug hydrophilization. The method of low-temperature differential scanning calorimetry showed the possibility to obtain phenacetin solid dispersions with polyethylene glycol and Pluronic F127. The method of low-temperature differential scanning calorimetry proved that when the polymer/phenacetin ratio is 10:1, the crystalline phase of the drug is not fixed, while when the ratio is 1:1 the pharmacological component exhibits the properties of a separate phase and does not form a solid dispersion. Phenacetin does not exhibit plastifying action and does not change the thermophysical properties of polymer phase that can facilitate an easy release of the drug from the composite.

http://dx.doi.org/10.5829/idosi.wasj.2013.24.07.13235

Keywords

Differential scanning calorimetry, Phenacetin, Pluronic f127, Polyethylene glycol, Solid dispersion