Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **31** (7): 941-6 (2012)

Regular Article

Received: June 29, 2012
Accepted: August 5, 2012

Tailoring Binary and Tertiary Solid Dispersion Compositions of Nelfinavir Using Spray Drying

Sunil P. DEWANI *[1] & Bhakti B. BARIK [2]

[1] *Institute of Pharmaceutical Education and Research, Borgaon (Meghe), Wardha (MS), India*
[2] *College of Pharmacy, Jazan University, Kingdom of Saudi Arabia*

***SUMMARY*. In order to reduce the recrystallinity of poorly insoluble drug nelfinavir, PEG 6000 blends were prepared by spray drying with HPMC. The maximal reduction of recrystallinity in PEG 6000 was obtained by co-spray drying with HPMC as revealed by *in vitro* dissolution studies. The resulting ternary solid dispersions containing nelfinavir were characterized. The results of this study show that addition of PEG 6000 to nelfinavir/HPMC system leads to extended release of nelfinavir that in most cases recrystallizes indicated by reduction in solubility. For all ternary dispersions containing 20 % of nelfinavir, the drug was highly amorphous and dissolution was improved compared to binary 20/80 w/w nelfinavir/HPMC solid dispersion. For all ternary dispersions containing 40 % of nelfinavir, the drug indicated slower and consistent release over a prolonged time, without recrystallization. These results show that provided nelfinavir is highly amorphous, addition of PEG 6000 to HPMC leads to an extension of drug release.**

KEY WORDS: Differential scanning calorimetry, HPMC, Nelfinavir, PEG 6000, Solid dispersion, Spray drying.

* Author to whom correspondence should be addressed. *E-mail:* invinciblesunil@rediffmail.com