Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **29** (8): 1303-10 (2010)

Original Article
Received: February 27, 2010
Revised version: March 21, 2010
Accepted: March 27, 2010

Formulation and Pharmacodynamic Evaluation of Meloxicam Liquisolid Compacts

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SUMMARY. The purpose of this study was to improve the meloxicam dissolution rate through its formulation into liquisolid compacts and then to evaluate the *in vitro* and *in vivo* performance of the prepared liquisolid compacts. Dissolution efficiency, mean dissolution time and relative dissolution rate of liquisolid compacts were calculated and compared to marketed formulation. The degree of interaction between the ME and excipients was studied by differential scanning calorimetry and X-ray diffraction were used and results revealed that, there was a loss of meloxicam crystallanity upon liquisolid formulation and almost molecularly dispersed state, which contributed to the enhanced drug dissolution properties. The optimized liquisolid compact showed higher dissolution rates and dissolution efficiency compared to commercial product. The analgesic and anti inflammatory response of optimized liquisolid compact in Swiss albino mice and Wistar rats was found to be superior compared to the marketed formulation.

KEY WORDS: Analgesic, Anti-inflammatory, Dissolution efficiency, Liquisolid compacts, Meloxicam, Polyethylene glycol 400.

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