

**Institute of Pharmaceutical Technology and
Regulatory Affairs
Faculty of Pharmacy
University of Szeged**

I. Symposium of Young Researchers on Pharmaceutical Technology, Biotechnology and Regulatory Science

Szeged, Hungary



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Formulation of a solid oral drug delivery systems containing nanosuspension produced by combined wet milling technique

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Nanonization is a proven effective strategy to enhance the dissolution rate of poorly water-soluble drugs such as BCS class II (poorly soluble and good permeable) and Class IV (poorly soluble and poor permeable) pharmaceuticals, thus their bioavailability can be improved [1]. To overcome the instability of the nanosuspensions and also to improve the patient compliance could be the transformation of the product into solid dosage form. In this case it is necessary to ensure the rapid dissolution characteristics of the nanoparticles [2].

Our aims were, to optimize a combined wet milling process, and to formulate solid dosage forms for oral drug administration with rapid dissolution characteristics. The formulation processes were manual granulation, fluidization and lyophilisation.

Meloxicam (Mel) was used as a model active pharmaceutical agent. During the wet milling process aqueous PVA solution was used as the stabilizing agent. The additives used in formulation processes were Avicel, Kollidon, Aerosil, Mannitol, Comprecel and Trehalose.

The optimisation process was successfully executed. The granules produced by manual granulation showed sustained release. The lyophilisates and the granules made by fluid bed granulation had rapid dissolution characteristics.

References

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2. Van Eerdenbrugh B., Van den Mooter G., Augustijns P. Int. J. of Pharm. 364 (2008) 64–75

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