

## ABSTRACT

### **Influence of L-Arginine Concentration in Solid Dispersion of Ketoprofen-PEG 8000-L-Arginine to Dissolution Rate of Ketoprofen**

Rachma Dessidianti

The purpose of this study was to know the influence of L-Arginine as amin organic base in solid dispersion system of ketoprofen-PEG 8000 –L-Arginine to increase the dissolution rate of ketoprofen.

Solid dispersions of ketoprofen-PEG 8000 (5:5), ketoprofen-PEG 8000-L-Arginine with ration 5:5:1 and 5:5:2 were prepared by both melting-solvent method. Dissolution tests were applied to solid dispersions of ketoprofen-PEG 8000 (5:5), physical mixtures of ketoprofen-PEG 8000 (5:5), solid dispersions of ketoprofen-PEG 8000-L-Arginine (5:5:1) and (5:5:2), physical mixtures of ketoprofen-PEG 8000-L-Arginine (5:5:1) and (5:5:2) with the same ratio, and pure ketoprofen in water media.

The solid dispersions of ketoprofen-PEG 8000-L-Arginine (5:5:2) were found to have higher dissolution rates compared to pure ketoprofen, solid dispersion of ketoprofen-PEG 8000 with ratio 5:5, solid dispersion of ketoprofen-PEG 8000-L-Arginine with ratio 5:5:1 and physical mixtures of ketoprofen-PEG 8000-L-Arginine. It was caused by the reduction of ketoprofen's particle size, enhanced wettability of the drug particles brought about by PEG 8000 and also increased of surface effective area of ketoprofen. The other causes is about ionic intection between carboxyl group from ketoprofen and amin group from L-Arginine.

The dissolution of ketoprofen increased as a function of increased L-Arginine concentration. Solid dispersion of ketoprofen-PEG 8000-L-Arginine (5:5:2) gave the highest dissolution rates.

Keywords : Ketoprofen, PEG 8000, L-Arginine, Solid dispersion, Amin Organic Base, Dissolution rate.