

## ABSTRACT

### **The Effect of Curcumin-Hydroxypropyl- $\beta$ -cyclodextrin Complex Inclusion Formation on Curcumin Dissolution Rate Enhancement**

Curcumin is a yellow pigment extracted from *Curcuma longa* or *Curcuma xanthorrhiza*. Curcumin has shown various biological activities such as anti inflammation, antioxidant, anti cancer, etc. But its potential is limited by poor bioavailability due to its lack of solubility in aqueous solvents. Hydroxypropyl- $\beta$ -cyclodextrin has been investigated to increase the solubility and stability of curcumin by the formation of inclusion complex.

The purpose of this study was to improve the dissolution rate of poorly soluble curcumin with hydroxypropyl- $\beta$ -cyclodextrin complexation with ratio of 1:1 by solvent evaporation method. The effect of hydroxypropyl- $\beta$ -cyclodextrin on the dissolution rate of curcumin was investigated by comparing the dissolution efficiency of curcumin, physical mixture, and curcumin-hydroxypropyl- $\beta$ -cyclodextrin complex inclusion.

The result showed that the dissolution rate of curcumin was improved by the complexation with hydroxypropyl- $\beta$ -cyclodextrin compared with curcumin and its physical mixture.

Keywords : *Curcumin, hydroxypropyl- $\beta$ -cyclodextrin, Complex Inclusion, Dissolution Rate.*