



CHAPTER IV

CONCLUSIONS

The dissolutions of indomethacin capsules and piroxicam tablets were improved using the wet kneaded method of drugs and β -cyclodextrin. The solubility effect of β -cyclodextrin might increase the dissolution of drugs in dosage forms by increasing the wettability. β -Cyclodextrin had a surfactant like properties that could reduce the interfacial tension between water insoluble drugs and dissolution medium leading to a higher dissolution rate. Furthermore the wet kneading process might cause deaggregation, deagglomeration and reduction in particle size of drug particles. All of these effects might also contribute to the enhancement of dissolution rate of the drugs.

The present study indicated that the presence of β -cyclodextrin in the formulations enhanced dissolution of indomethacin and piroxicam even if the drugs are not totally formed the inclusion complex. In the wet kneading process, the drugs are dispersed on the surface of β -cyclodextrin and when dissolving, they formed complex with β -cyclodextrin in the dissolution medium thus enhancing the dissolution rate. The preparation of a real cyclodextrin inclusion complex is therefore not always necessary. Physical properties of indomethacin capsules and piroxicam tablets prepared from the wet kneaded mixtures were found to meet standard requirements in terms of weight variation, hardness, friability, disintegration and dissolution. The use of β -cyclodextrin as a filler in

tablets or capsules gave faster dissolution of the drugs than the use of sodium lauryl sulfate. On aging in loosely closed container, the dissolution of indomethacin capsules was decreased due to hard gelatin shell absorbed moisture and occluded the powder bed in pasty mass. The dissolution profiles of aged piroxicam tablets using β -cyclodextrin as an excipient appeared to be the same as those of freshly prepared tablets. The use of β -cyclodextrin as a tablet and capsule filler showed considerably promising that might apply to manufacture the products for commercial purposes.