CHAPTER IV

CONCLUSIONS

In this study, the preparations of propranolol hydrochloride and diclofenac sodium glyceride pellets were successfully prepared by using an extrusion/ spheronization technique. Three kinds of glycerides (glyceryl monostearate, Lubritab®, and Compritol® ATO 888) were used as matrix forming agent. The following conclusions could be drawn:

1. Drug release of the glycerides pellets was found to be much dependent on the solubility of the drug substance. The glycerides pellets might be suitable for application with the drug having low solubility. As it was found that the pellets containing highly water-soluble drug (propranolol hydrochloride) could not prolong release for 12 hours whereas the pellets that containing poorly water-soluble drug (diclofenac sodium) could extended release for 12 hours.

2. The release of the drug from the pellets was dependent on the type of glycerides employed. It was shown that the drug release was likely to decrease when the melting point of glycerides increased.

3. The curing process might be employed to have more prolonged drug release from glycerides matrix pellets. As it was shown that the temperature and duration of curing had an effect on the release of propranolol hydrochloride containing Lubritab® as matrix forming agent. The slower release of drug occurred after curing.

4. For the glycerides formulation with having prolonged release action, the release model would be best fit to first order plot and the mechanism of release would be Anomalous transport.

5. Drug release from the hard gelatin capsules containing matrix pellets was very fast in comparison with release rate from compressed tablets matrices made from the same pellets. This was due to a greater dissolution surface area resulting from a larger number of particles being exposed to the dissolution medium, as it was evident by the smaller size of pellets giving higher drug release.