Thesis Title Application of Hot-Melt Fluid-Bed Coating Process for Controlled Release of Propranolol Hydrochloride pellets

Name Wanida Pornchaisuree

Degree Master of Science (Pharmacy)

Thesis Supervisory Committee

Ampol Mitrevej, Ph.D.

Varaporn Junyaprasert, Ph.D.

Nuttanan Sinchaipanid, Ph.D.

Date of Graduation 16 May B.E. 2540 (1997)

ABSTRACT

Pellets containing 40% propranolol HCl and 60% microcrystalline cellulose (Avicel® PH101) were prepared using a fluidized-bed rotary granulator (Glatt GPCG1). The pellets having a size fraction of 16/18 mesh were further coated with molten wax in a fluidized-bed top spray coater. The effects of varying the blend ratio of the two waxes, Precirol ATO5 and Gelucire 50/02, and thickness of the coating material were evaluated as drug release regulators. In addition, surface morphology and cross section of the pellets were examined using scanning electron microscope. Dissolution tests showed that by coating the pellets with Precirol ATO5 or blend of Precirol ATO5 with Gelucire 50/02, it was possible to retard the rate at which the drug was released. The drug release rate could be regulated by varying the amount of coating on the pellets, as well as the composition of the coating material. It was observed that the semilog plot of %drug release versus reciprocal of time gave a linear relationship.