ABSTRACT

Charles University in Prague
Faculty of Pharmacy in Hradec Králové
Department of pharmaceutical technology
Candidate: Mgr. Jana Vilímová
Consultant: Doc. RNDr. Milan Dittrich, CSc.
Title of Thesis: Degradation mechanism of aliphatic polyesters

In this thesis some manifestations of matrices degradation were studied. Matrices were prepared from biodegradable carriers synthesized by polycondensation reaction of aliphatic α-hydroxyacids, such as DL-lactic acid and glycolic acid, and of tripentaeryhritol or dipentaerythritol applied as the branching agent. Matrices erosion was revealed as the process which varies by the duration and type of the initial phase of discontinuity (lag-time and burst effect). During second folowing phase proceeds erosion by the slower way. The swelling of the oligomeric and polymeric matrices is very susceptible to changes of parameters of carrier, matrices, and also of liquid medium. The time-course of swelling is characterised by one or more extremes (i.e. maximal and minimal values). It was showed that the acid number values in various time intervals for the taking of matrices samples are in connection with corresponding swelling degree values. It is a prerequisite aspect for the elucidation of the mechanism of pulse time-course of swelling.