

# ABSTRACT

Charles University in Prague, Faculty of Pharmacy in Hradec Králové

Department of Pharmaceutical Technology

Candidate **Mgr. Daniela Praislerová**

Consultant **PharmDr. Eva Šnejdrová, Ph.D.**

Title of Thesis **Branched polyesters plasticized by ethylpyruvate as adhesive carriers of drugs**

The aim of this rigorous thesis was the study of adhesive and rheological properties of branched oligoesters and acyclovir and fluconazole release from these carriers. The theoretical part introduces especially bioadhesion (the mechanism and factors), the application of the bioadhesives, the plasticization and the measuring of the viscosity. The practical part is regarded to the adhesion of the polyesters of lactic and glycolic acids branched using pentaerythritol and tripentaerythritol in different concentrations, plasticized by 20 % of ethylpyruvate. Plasticized carriers represent the viscous systems; their adhesion to the substrate can be explained by wetting theory. All tested polyesters showed the adhesive properties. The optimal adhesiveness was found out at certain range of the viscosity values. Drug release was influenced particularly by the molar weight of the carriers. Sustained release of acyclovir from carrier branched by tripentaerythritol in concentration of 5 % was obvious with no burst effect; 80% of acyclovir was released during the 11 days by zero-order kinetics.

Keywords: branched polyesters, bioadhesion, acyclovir release, fluconazole release