

# 1 Abstract

Charles University in Prague, Faculty of Pharmacy in Hradci Králové

Department of: Pharmaceutical technology

Consultant: Doc. PharmDr. Zdeňka Šklubalová, Ph.D.

Student: Lucie Dušková

Title of Thesis: Dissolution testing of tablets containing theophylline and mixtures of two types of calcium hydrogen phosphates and lactose

The aim of this diploma thesis was to study effect of the composition of powders on the tablets dissolution. The mixtures that had been used to prepare the tablets that were composed of three types of fillers - lactose, calcium hydrogen phosphate anhydrous and dihydrate, theophylline as model drug and magnesium stearate as lubricant. Dissolution tests were performed using those prepared tablets. Basket dissolution method was used (USP-1) with 0.1M hydrochloric acid as dissolution medium.

The results of this work show that different fillers have different effect on the dissolution tests. Total amount and release speed of theophylline from tablets can be influenced by the ratio of lactose and one of two used types of calcium hydrogen phosphate. The fastest drug release was observed in tablets containing high percentage of lactose. The release speed and also the amount of released drug is decreasing with the increasing amount of both types of calcium hydrogen phosphate and decreasing amount of lactose. Type of calcium hydrogen phosphate is not influencing total amount of released drug but rather its release speed from tablets.