

ABSTRACT

CHARLES UNIVERSITY

FACULTY OF PHARMACY IN HRADEC KRÁLOVÉ

DEPARTMENT OF PHARMACEUTICAL TECHNOLOGY

Author: Tereza Pokorná

Title of Diploma thesis Terbinafine-loaded biodegradable polymeric systems for topical administration

Supervisor: PharmDr. Eva Šnejdrová, Ph.D.

In the diploma thesis the released properties of solid dispersions with terbinafine, based on polyesters of D,L-lactic acid and glycol acid, branched with pentaerythritol and tripentaerythritol are studied. The theoretical part deals with solid dispersions, their classification and methods of preparation, methods of drug dissolution testing, properties, effect, use of terbinafine and preparations containing terbinafine. In the experimental part, solid dispersions were prepared by the melting method. The drug was incorporated into the polyester in the form of a hydrochloride or a base in a concentration of 10 % or 20 %. Some systems were plasticized with 30% triethyl citrate. Thin layers were formulated from solid dispersions, and drug dissolution tests were performed on phosphate buffer pH 7.4 at 37 °C. Assay of terbinafine released was performed spectrophotometrically at 223 nm and ultra-high performance liquid chromatography. Based on the results of this diploma thesis, it can be clearly stated that the suitable carrier of terbinafine for the topical formulation of thin layers is an oligoester branched with pentaerythritol, plasticized with 30% triethyl citrate, incorporating terbinafine in the form of a base and using ultra-high performance liquid chromatography for assay of the drug.

Key words: solid dispersion, thin layer, branched polyester, terbinafine, dissolution