

Abstract

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Title of Thesis: Optimisation of preparation of nanoparticles from branched polyesters with terbinafine

The theoretical part of the thesis describes methods of microencapsulation and nanoencapsulation of drugs into polymeric carriers with a particular emphasis on nanoparticulate systems from copolymers of lactic and glycolic acids. Experimental part of the thesis focuses on formulation and testing of particles from terpolymer of DL-lactic acid, glycolic acid and tripentaerythritol characterised by a branched molecular structure. The particles were prepared by using of emulsion distribution and evaporation method. Terbinafine and cetrimide hydrobromide was incorporated into the particles. Cetrimide hydrobromide in very low concentrations in water solution was also used as an emulsifying agent, which adjusts properly surface charge. Polyhydric compounds such as mannitol, trehalose and mannose were used in emulsion outer phase as a stabilising agent. Granulometric characteristics, mainly Z-average of intensity diameter of microparticles and nanoparticles, also particle size distribution, and their polydispersity were monitored. The findings further include the possibilities of further processing of dispersions by drying and a potential of modification of dissolution parameters by the use of appropriate additives.