Abstract

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Title of the Diploma Thesis	A study of directly compressible tableting materials and matrix tablets with polyvinyl alcohol

This work evaluates and compares the properties of directly compressible tableting materials and matrix tablets containing the combination of α-lactose monohydrate and microcrystalline cellulose in the ratio of 3:1 in a physical mixture and in a coprocessed dry binder. Polyvinyl alcohol is used as the retarding agent at the concentrations of 30, 40 and 50 %. Tested parameters are compressibility, tensile strength of tablets and the rate of drug release from tablets. Compressibility is evaluated by means of the energy profile of the compression process. Dissolution testing is performed using rotating basket method.

The values of total energy of compression, plasticity and tensile strength of the tablets were higher in the tableting materials with the coprocessed dry binder. Increasing additions of polyvinyl alcohol decreased the values of total energy of compression, plasticity, tensile strength of tablets and drug release rate. The dissolution behavior of tablets, which contained physical mixture or coprocessed dry binder and the same amount of polyvinyl alcohol was comparable.