Abstract

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Title of the Diploma Thesis	A study of directly compressible tableting materials and tablets with the retarding component containing polyvinyl acetate and povidone.

Compressibility of directly compressible tableting materials used for manufacturing of prolonged release matrix tablets is being investigated in this thesis. Prosolv® SMCC 90 and MicroceLac® 100 were used as coprocessed dry binders. Kollidon® SR in concentration 20 % and 30 % as well as mixture of 10 % Kollidon® SR with Compritol® 888 ATO at the concentration of 10 % werechosen as retarding agents. Compressibility of each tableting blend was described using compression energy profile and tensile strenght of tablets. Rotating basket method was chosen for disolution testing.

Values of all energies of the compression proces and plasticity were higher in the case of tableting materials with coprocessed dry binder Prosolv® SMCC 90. These tablets also showed higher tensile strenght. Tablets with 30 % of Kollidon® SR showed thehighest tensile strength and tablets with the combination of retarding agents Kollidon® SR and Compritol® 888 ATO showed the lowest tensile strength in the case of both coprocessed dry binders. Active ingredient was liberated faster from tablets formed from tableting blend with MicroceLac® 100 then from those with Prosolv® SMCC 90. Considering MicroceLac® 100, the fastest drug release was observed in tablets with addition of 20 % Kollidon® SR. The fastest release of the active substance from Prosolv® SMCC 90 tablets was achieved by addition of retarding mixture with10 % Kollidon® SR and 10 % Compritol® 888 ATO.