

## Abstract

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Title of Thesis: Evaluation of co-processed excipients containing mannitol or maltodextrins

By the co-processing of two or more excipients using the appropriate methods (most often spray drying) are produced substances which are known as co-processed. There are no changes in the chemical structure in their production, the substances interact at the submolecular level. These resulting excipients have better properties than individual components of the mixture. Co-processed excipients are used for the direct compression of tablets and evaluation of their properties can help to choose the suitable material for the formulation.

The aim of this thesis is the evaluation of six different co-processed excipients containing mannitol (Parteck<sup>®</sup> ODT, PROSOLV<sup>®</sup> ODT, Pharmaburst<sup>®</sup>, PEARLITOL<sup>®</sup> Flash) or maltodextrins (GLUCIDEX<sup>®</sup> 2, GLUCIDEX<sup>®</sup> 6D). The compressibility (using force-displacement record) and the properties (dimensions, tensile strength, disintegration, friability, pycnometric density and water absorption) of the compressed tablets were evaluated for compression forces of 3 kN, 5 kN and 7 kN. Samples containing maltodextrins showed higher values of energy  $E_2$  and  $E_3$  and tensile strength compared to other materials. The ejection force was lower for these substances. GLUCIDEX<sup>®</sup> 2 and GLUCIDEX<sup>®</sup> 6D dissolve during the disintegration and water absorption test. Materials containing maltodextrins, PROSOLV<sup>®</sup> ODT and Parteck<sup>®</sup> ODT (3 kN) fulfil the requirements of the Czech Pharmacopoeia for tablet friability. Tablets containing Pharmaburst<sup>®</sup>, PEARLITOL<sup>®</sup> Flash, Parteck<sup>®</sup> ODT and PROSOLV<sup>®</sup> ODT (3 kN a 5 kN) fulfil the requirements of the Pharmacopoeia for the disintegration time (3 minutes).