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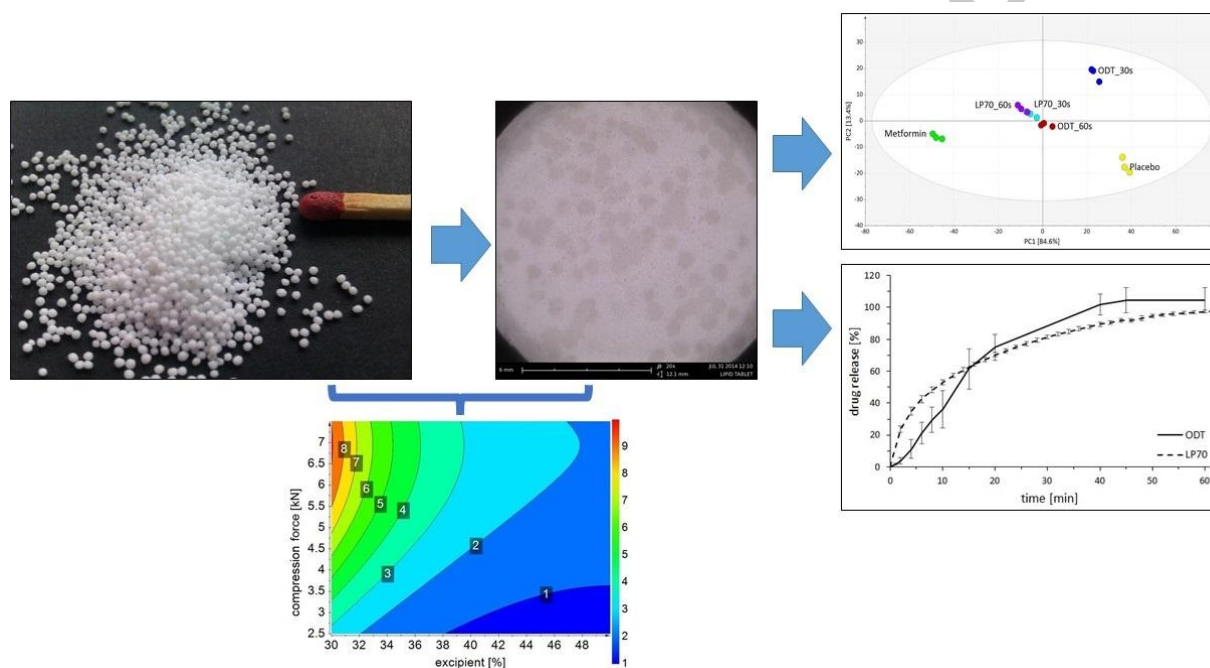


# Orodispersible tablets containing taste-masked solid lipid pellets with metformin hydrochloride: Influence of process parameters on tablet properties

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Graphical abstract



## Abstract

Compaction of multiparticulates into tablets, particularly into orodispersible tablets (ODTs), is challenging. The compression of pellets, made by solid lipid extrusion/spheronization processes, presents peculiar difficulties since solid lipids usually soften or melt at relatively low temperature ranges and due to applied mechanical forces. Until now, there are no reports in literature about the development of ODTs based on solid lipid pellets. To investigate the feasibility of producing such tablets, a design of experiment (DoE) approach was performed to elucidate the influence of compression force and amount of two co-processed excipients (Ludiflash<sup>®</sup> and Parteck<sup>®</sup> ODT) on properties of the tablets (friability, tensile strength, and disintegration time). ODTs (15 mm, flat-faced) with solid lipid pellets (250-1000  $\mu\text{m}$  in diameter) containing 500 mg of metformin HCl, presenting immediate drug release profile and taste-masked properties, were targeted. During compression, a strong lamination of the tablets containing Parteck<sup>®</sup> ODT was observed. This phenomenon was prominently observed when high compression forces ( $\geq 5$  kN) and high excipient amounts ( $\geq 40\%$ ; w/w) were used. On the other hand, the DoE focused on tablets with Ludiflash<sup>®</sup> showed

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