ABSTRACT

STUDY OF CUSHIONING AGENT FOR MULTIPLE UNIT PELLET SYSTEM (MUPS) TABLETING
Literature Review

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Multiple unit pellet system (MUPS) can be compacted into tablets, but when compacted some MUPS can suffer damage on the coating layer which affects the release of the drugs. One strategy to solve this problem is the addition of a cushioning agent that can prevent damage on the coating layer of pellets. Therefore, this study is conducted to determine the materials and characteristics of cushioning agent that can protect pellets during MUPS tableting. This study is using scoping review method by searching literature in 3 online databases namely Science Direct, PubMed, and Google Scholar. Based on the search results, 10 articles was obtained and selected through duplication screening and sorting based on inclusion criteria. Those 10 selected articles were then extracted and analyzed. Based on the analysis of data from the selected literatures, it can be seen that the materials of cushioning agent that can protect pellets during MUPS tableting is lactose combined with other material such as HPC polymers. Additionally, MCC PH 101 combined with other materials that are brittle, such as maltitol and sorbitol. The characteristics of cushioning agent that can protect pellets during MUPS tableting are has a small particle size (<20 μm), a balance of plastic-brittle deformation Py value 58-150 MPa, and a porous or smooth without pores surface morphology. Furthermore, it is recommended to conduct a laboratory research related to the determination of Py value range and the effect of surface morphology particles of the cushioning agent to protect pellets during MUPS tableting.

Keywords: multiple unit pellet system, MUPS tablet, cushioning agent.