

DIRECT COMPRESSION PROPERTIES OF CO-PROCESSED EXCIPIENT CONTAINING COW BONE POWDER, KHAYA GUM AND MAIZE STARCH

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ABSTRACT

The aim of this study was to evaluate the direct compression properties of a novel co-processed excipient (CPE) generated by processing cow bone powder (CBP), maize starch (MS) and Khaya gum (KG) together to form a single composite excipient. Design of experiments (DoE) was employed to optimise the formulation of CPE. CPE was prepared by wet granulation using the optimised formulation of CBP (40%), MS (40%) and KG (20%) as recommended by DoE. Assessment of the organoleptic properties of CPE revealed an odourless, tasteless and coarse texture with a neutral pH of 7.3. CPE was found to be partly crystalline and partly amorphous and demonstrated compatibility between the three components of the formulation. The material in terms of flowability compared well with the flow parameters of StarLac, a reference co-processed excipient. Tablets of diclofenac produced by direct compression using CPE as the directly compressible excipient compared well with the hardness and disintegration time of tablets made using StarLac® as the directly compressible excipient. The study's outcome shows that CPE can be used as a direct compression excipient in the formulation of tablets by direct compression.

Keywords: Co-processing, Excipient, Direct compression, Tablets

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