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Xylitol: a potential alterative pharmaceutical excipient in the production of pharmaceutical tablets

An excipient is an inactive material that aids as the vehicle for a drug and gives suitable consistency or form to the pharmaceutical product. Xylitol, a naturally occurring material that can be found in food sources such as berries, mushrooms, lettuce and corn, is an attractive excipient for oral drug delivery because it can be safely consumed by non-insulin dependent diabetics as well as the obese and it may play a role in weight reduction. Xylitol can produce a pleasant cooling effect in the mouth, which is highly effective to mask the unpleasant flavours associated with some drugs. However, xylitol has poor compactibility and compressibility that make it unsuitable for tableting.

This study employed antisolvent crystallization technique to improve the compactibility and the pharmaceutical performance of xylitol by improving its physicochemical properties to make it better suited for tableting using direct compression. The use of engineered xylitol can be recommended for future use by formulators in the pharmaceutical industry towards direct compression of tablets with improved physical, mechanical and biopharmaceutical behaviour.