CHAPTER 10: APPENDIX

1) REVIEW ARTICLE:

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Multiparticulates Drug Delivery Systems: A Review
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ABSTRACT

Pharmaceutical research and development are increasingly focusing on delivery systems which enhance desirable therapeutic objectives while minimising side effects. Recent trends indicate that multiparticulate drug delivery systems are especially suitable for achieving controlled and delayed release oral formulations with low risk of dose dumping. These oral multiparticulate drug delivery systems offer biopharmaceutical advantages with respect to predictable and even distribution and transportation in the gastro-intestinal tract. Pelletization is novel drug delivery system that converts fine powder particles into pellets and it is useful in order to develop a site-specific drug delivery system. There are different techniques in the preparation of pellets. Consequently, multiparticulate drug delivery systems provide tremendous opportunities for designing new controlled and delayed release oral formulations, thus extending the frontier of future pharmaceutical development.

Keywords: Pelletization, Multiparticulate drug delivery system, Novel drug delivery system, Pellets.
DEVELOPMENT AND IN VITRO EVALUATION OF MULTIPARTICULATE CONTROLLED DRUG DELIVERY SYSTEM
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ABSTRACT

The objective of the present study was to develop and evaluate a multiparticulate system for controlled drug delivery system. The system comprising of Eudragit NE 40D coated pellets, designed for controlled drug delivery of Zolpidem Tartarate. The sugar beads/pellets were loaded with drug (Zolpidem Tartarate) using PVP K30 as a binder and HPMC E5 LV as a coating material. Different coat weights of Eudragit NE 40D were applied to the drug loaded pellets in Fluidized Bed Processor (FBP) to produce the controlled release drug delivery. Scanning electron microscopy revealed that the drug layered pellets were discrete, spherical or oval with a slightly rough surface whereas the coated pellets were covered with a uniform and continuous Eudragit NE 40D film. The friability with glass spheres was below 1.0%, signifying the core pellets produced were sufficiently hard. In vitro dissolution studies of the pellets performed which showed that the drug release from the coated pellets depends on the coat weights applied. Since, Zolpidem Tartarate is a drug, which exhibits a high solubility, it would be possible to minimize drug release from coated pellets and effectively release the drug for controlled drug delivery system.

KEYWORDS: Eudragit NE 40D, Zolpidem Tartarate, Multiparticulate System, Fluidised Bed Processor