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Biphasic Gastroretentive Drug Delivery System of Acyclovir: Formulation and *In Vitro* Evaluation

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SUMMARY. A biphasic gastroretentive drug delivery system of acyclovir consisted of loading dose tablet and floating multiple matrix tablets was prepared by direct compression process. The delivery system was designed by hydroxy propyl methyl cellulose as retardant polymer with an effervescent component to get the desired buoyant and sustained release characteristics. All formulations compile within the limits. The FTIR studies did not show any evidence of an interaction between acyclovir and polymers. Dissolution studies revealed biphasic drug release pattern, with loading dose released within 30 min and floating multiple matrix tablets provided zero order sustained release profile for 12 h. It is concluded that floating multiple matrix tablets designed were particularly suitable as gastro retentive drug delivery system with anomalous non-fickian diffusion mechanism. The stability studies showed no significant change in dissolution profiles (f_2 value > 50).

KEY WORDS: Biphasic release, Gastroretention, Multiple matrix tablets, Release kinetics.

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