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Development and optimization of fast dissolved tablets containing high dose of extremely bitter drug: Taste masking and enhancement of drug dissolution using sugar based excipients

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The purpose of this research was to mask the intensely bitter taste of aceclofenac and to formulate an orodispersible tablet of the taste-masked drug for enhancement of drug dissolution. Preformulation studies were performed for taste masking of the drug which includes granulating the drug with B-cyclodextrin. A full factorial design was employed for the optimization and to explore the effect of several sugar based excipients such as diluents type (X1; Galen®IQ and Prosolve®), type of superdisintegrant (X2; Croscarmellose sodium, Crospovidon® and Sodium starch glycolate) and concentration of superdisintegrant (X3; 10% and 20) on the release extent of the drug from orodispersible tablets. The formulated orodispersible tablets were assessed for in vitro wetting time, in-vitro disintegration time, in-vivo disintegration time, in vitro release, hardness, friability and drug content. The components of the optimized orodispersible tablet formulation were aceclofenac, B-cyclodextrin, citric acid, Prosolve®, 10% Crospovidon®, Pearlitol®, Aspartam (3%), Pruv® (1%) and Aerosil 200® (1%). The optimized formulation showed rapid in vitro disintegration (about18 sec.), rapid in vitro release rate of 84.3% in 5 minutes and acceptable taste sensation. It could be concluded that a promising taste masked orodispersible tablet of aceclofenac with enhanced drug dissolution was successfully designed.

Biography

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