ORIGINAL RESEARCH ARTICLES

A SCAFFOLD OF CENTRAL COMPOSITE DESIGN (CCD) IN QUALITY BY DESIGN (QBD) FABRICATION AND ASSESSMENT OF MUCOADHESIVE AMOXICILLIN MICROSPHERES

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ABSTRACT

In the present investigation, amoxicillin loaded mucoadhesive microspheres were prepared and characterized. The prepared formulation was optimized using two factorial three level central composite experimental design employing response surface methodology. Drug loading (%), and concentration of HPMC (%) were chosen as independent variables. The response yield and drug release were designated as dependable variable. The characterization of fabricated microspheres was conducted by FTIR, scanning electron microscopy (SEM), entrapment efficiency and particle size analysis. Wash out tests and mucoadhesive test of prepared formulations were also carried out. SEM studies revealed the surface smoothness of fabricated microspheres. Further, *in vitro* release study of preparations was conducted and the results were best fitted into Higuchi kinetic model. The percentage yield and drug release from optimized batch was found to be 72.08 and 85.53, respectively.