

DESIGN AND EVALUATION OF SELF-NANOEMULSIFYING DRUG DELIVERY SYSTEM FOR DEFERASIROX

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ABSTRACT

In order to increase deferasirox's (DEF) solubility and dissolution rate, the study aims to develop a solid self-nanoemulsifying drug delivery system (S-SNEDDS). The impact of concentrations of oil and surfactant on emulsification and *in vitro* drug release was investigated using an oil, surfactant and co-surfactant mixture. Based on a minimum time of emulsification and a high cumulative percentage of drug dissolution, the formulation F6 was optimized. The optimized formulation showed an emulsification efficiency of 19 ± 0.67 seconds and *in vitro* drug release of 98.65 ± 0.259 % in 30 minutes. Neusilin® US2 was used to solidify the formulation, which has a high oil adsorption capacity and better micromeritic characters. The analyses of X-ray powder diffraction and differential scanning calorimetry studies displayed the transformation of DEF from its crystalline form to an amorphous form. So, this study demonstrates that the S-SNEDDS is a viable innovative drug delivery strategy for elevating DEF's solubility and dissolution rate.