



Formulation and Evaluation of Solid Dispersion of Furosemide in Poly vinyl Pyrrolidone K 30

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Abstract:This investigation was carried out to determine if a solid dispersion of Furosemide in Poly vinyl pyrrolidone (PVP K-30) will enhance the dissolution and permeation properties of the drug.Solid dispersion of Furosemide in PVP K 30 was prepared in ratios by Solvent Evaporation Method amongst which 1:4 was the optimized batch. Permeation study was also performed. In this case, the solid dispersion was characterized by Fourier transform Infrared spectroscopy, differential scanning calorimetry (DSC) to ascertain if there were any physicochemical interactions between drug and carrier that would effect dissolution. Mouth dissolving tablets containing solid dispersion were formulated. The dissolution studies were performed at $37 \pm 0.5^{\circ}$ C and 50 rpm in simulated gastric fluid (pH 6.8).

FTIR spectroscopy and DSC showed a change in crystal structure toward an amorphous form of Furosemide. Dissolution data indicated that Furosemide dissolution was enhanced. FTIR,DSC spectroscopy and dissolution studies indicated that solid dispersion formulated in 1:4 ratio showed an increase in dissolution .Solid Dispersion technique can be used to improve the dissolution of Furosemide along with its permeation.

Keywords:Solid dispersion, Furosemide, Poly vinyl pyrrolidone K-30, 0.1% Sodium lauryl sulphate,physicochemical characterization.