



Research Article

ENHANCEMENT OF SOLUBILITY OF POORLY WATER SOLUBLE DRUG – METRONIDAZOLE BY HYDROTROPY

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ABSTRACT

Metronidazole is an oral synthetic antiprotozoal and antibacterial agent, 2-methyl-5-nitroimidazole-1-ethanol ($C_6H_9N_3O_3$). It is physically available in white to pale yellow crystals or crystalline powder with 159-163^oC melting point. It is sparingly soluble in Water and in Alcohol; slightly soluble in ether and chloroform. In the present investigation different concentrated solutions of urea (a hydrotropic agent) were employed to enhance the aqueous solubility of Metronidazole which is a poorly water-soluble drug. Here hydrotropic phenomenon i.e solvent evaporation technique and melting method were employed to prepare solid dispersions of Metronidazole. Solid dispersions were evaluated for dissolution rate and a marked increase in dissolution rate was observed. Marked increase in Metronidazole release during drug dissolution profile was found with its solid dispersions as it is poorly water soluble drug. As a hydrotropic agent Urea was used to prepare solid dispersion so that the solubility of Metronidazole could be increased.

Keywords: Metronidazole, Urea, Hydrotropy, solid Dispersion, Dissolution