Adsorption and Co-adsorption; Effective Techniques for Enhancement of Domperidone Dissolution

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Abstract:

Domperidone is a dopamine antagonist antiemetic drug[1], water-insoluble and weakly basic with poor dissolution rates at high pH values[2]. The current study aimed to improve such dissolution via adsorbates and co-adsorbates formulations. Adsorbates of drug with Avicel PH 101, Florite R and Aerosil 200 were prepared in different weight ratios by physical mixing, grinding and solvent deposition methods. Co-adsorbates of drug with Tween 80 and Aerosil 200 were prepared by solvent deposition method in different weight ratios. These systems were characterized using Infrared Spectroscopy (FT-IR), Differential Scanning Calorimetry (DSC), powder X-ray diffractometry (P-XRD) and in-vitro dissolution. The results showed marked enhancement of domperidone dissolution at both pH1.2 and pH6.8 (7 fold and 5 fold, respectively) compared to drug alone.

References:

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[2].European Pharmacopoeia, 4th ed., Council of Europe, Strasbourg ,2001, pp.1079-1082.