Design, Formulation and Characterization of Fast Dissolving Films Containing Dextromethorphan

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Abstract:

The aim of this study was to formulate and characterize fast dissolving films containing dextromethorphan hydrobromide (DM) for oral use. Hydroxypropyl methylcellulose E15 (HPMC) was used as the film forming polymer and crosspovidone (CPV), microcrystalline cellulose (MCC) were used as superdisintegrants. In this study, medicated films were prepared by solvent casting method. The physicochemical characterizations were done by Fourier transform infrared spectroscopy (FTIR) and differential scanning calorimetry (DSC) for DM-loaded fast dissolving films and their corresponding physical mixtures as well as the individual components to investigate the drug polymer interaction. The obtained DSC and FTIR results indicated that DM was molecularly dispersed in the matrix of HPMC. The prepared films were also characterized for their tensile strength, percentage of elongation, taste palatability, surface pH, weight and their content uniformity. In addition, DM-loaded oral films were elegant enough, transparent, flexible, smooth, homogeneous and palatable. It was found also that both of film disintegration and drug release increased as the concentration of disintegrant in the film increased.

Keywords:

Characterization, Fast dissolving films, Dextromethorphan.

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