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Influence of mechanical milling time on physicochemical properties and stability of cefotaxime sodium

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Abstract:

The aim of this study was to examine the effect of mechanical milling time on physicochemical properties and stability of Cefotaxime sodium (CS). CS was micronized by ball milling in five period of time: 30, 60, 120, 240, and 360 min. The powder properties of the samples were examined by HPLC assay, laser diffraction, helium densitometry, IR spectrophotometry, X-ray diffraction (XRD), scanning electron microscopy (SEM), differential scanning calorimetry (DSC), thermogravimetric analysis (TGA) and Karl-Fisher titrimetry. The results showed that ball milling was not an appropriate method for particle size reduction to make solid dosage form such as dry powder inhaler formulation (DPI) of CS and by increase in milling time, degradation of CS increased.

Keywords:

Ball milling . Particle size reduction

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