

Preparation and Characterization of Fenofibrate and Glycyrrhizic Acid Solid Dispersions by Co-Grinding

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SUMMARY. The solid dispersions of fenofibrate (FNB) and glycyrrhizic acid (GA) were prepared by co-grinding. The interaction of FNB with GA was investigated by X-ray diffraction, Fourier transform infrared spectroscopy, differential scanning calorimetry, scanning electron microscope and nuclear magnetic resonance spectroscopy. In addition, *in vitro* drug dissolution, stability and pharmacokinetic were also used to evaluate the solid dispersions. The results showed that FNB/GA solid dispersions were successfully prepared by co-grinding. The prepared solid dispersions had improved dissolution, stability and bioavailability of FNB, compared with pure drug without additives and physical mixings of FNB with GA.

RESUMEN. Las dispersiones sólidas de fenofibrato (FNB) y ácido glicirricico (GA) se prepararon por molienda conjunta. La interacción de FNB con GA se investigó mediante difracción de rayos X, espectroscopía infrarroja por transformada de Fourier, calorimetría diferencial de barrido, microscopía electrónica de barrido y espectroscopía de resonancia magnética nuclear. Además, la disolución del fármaco *in vitro*, la estabilidad y la farmacocinética también se utilizaron para evaluar las dispersiones sólidas. Los resultados mostraron que las dispersiones sólidas de FNB/GA se prepararon con éxito mediante molienda conjunta. Las dispersiones sólidas preparadas tuvieron una disolución, estabilidad y biodisponibilidad mejoradas de FNB, en comparación con el fármaco puro sin aditivos y mezclas físicas de FNB con GA.

KEY WORDS: co-grinding, fenofibrate, glycyrrhizic acid, solid dispersions.

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