ABSTRACT

Influence of LHPC LH-11 as adsorbent on the dissolution rate of curcumin in solid dispersion of curcumin-PVP K-30

Curcumin has a number of pharmacological effects such as antibacterial, antidiabetic, anti-inflammatory, anticancer, antispasmodic, antioxidant, etc. Curcumin is practically insoluble in water and poor penetration the biological membrane. In the biopharmaceutical classification system (BCS), curcumin grouped in class IV according poor solubility and penetration the biological membrane. This study conducted to enhance the dissolution rate of curcumin preparing solid dispersion of PVP K-30 with the addition of LHPC LH-11 as adsorbent could increase drug wettability and also increase surface area of curcumin, so the dissolution rate of curcumin could increase. Solid dispersion system of curcumin-PVP K-30 with LHPC LH-11 as adsorbent, solid dispersion system of curcumin-PVP K-30, and surface adsorption system of curcumin-LHPC LH-11 were made by solvent evaporation method with ratio 1:1:2; 1:1; and 1:2. Evaluation were carried out by dissolution test of solid dispersion system of curcumin-PVP K-30 with LHPC LH-11 as adsorbent, solid dispersion system of curcumin-PVP K-30, surface adsorption system of curcumin-LHPC LH-11, physical mixtures, and pure curcumin substance. The result showed that the solid dispersion curcumin-PVP K-30 adsorbed in LHPC LH-11 surface had the highest dissolution rate.

Keywords: Curcumin, PVP K-30, LHPC LH-11, Solid dispersion, Dissolution.