603d Effects of Polymers on Crystal Growth and Morphology of Salbutamol Sulphate

Shuyi Xie, Shaohua Feng, and Reginald B. H. Tan

The requirement of producing fine particles is always found in pharmaceutical industries, especially in the production of inhalation drugs. Since fine particles tend to grow and agglomerate, resulting in increase of particle size distribution, measures always need to be taken to stabilize the particles and inhibit particle growth. Polymers can be used as crystal growth modifiers due to the fact that polymers undergo strong adsorption at the crystal-solution interface thus inhibiting the deposition of additional molecules to the crystal lattice. In this work, several polymers such as hydroxypropyl methyl cellulose (HPMC) are investigated in stabilising the surfaces of fine particles. The results show that these polymers have considerable influence on particle morphology and particle size distribution. The model compound in this work is salbutamol sulphate, a drug for treatment of asthma. The method of anti-solvent is employed in order to achieve high supersaturation rate and thus obtain fine particles. Ethanol is selected as anti-solvent.