Preparation of fine Cefpodoxime Protextil (CPD) particles using ASES (Aerosol Solvent Extraction System)

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Cefpodoxime Protextil (CPD) is an orally absorbed, broad spectrum, third generation cephalosporin ester. CPD is a poorly water-soluble drug. The objective of this work is to make fine CPD particles and then enhance its bioavailability. Cefpodoxime proxetil (CPD) fine particle was prepared by Aerosol Solvent Extraction System (ASES) using supercritical CO2 antisolvent. Ethyl acetate and Methylene chloride were used as solvents. The size of primary particle was measured to be 0.1~0.2㎛and the morphology is similar to spherical type. The secondary particle size was about 0.2~0.4㎛ as a result of primary particle agglomeration. The size and shape of recrystallized CPD particle were affected by agglomeration. The degree of agglomeration was reduced using high ratio of CO2 weight to solution weight, low solution concentration. Especially, the agglomeration was decreased using ethyl acetate and acetone as a solvent. And the dissolution rate of processed CPD was increased.