Recrystallization of Adefovir Dipivoxil particles using RESS process

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Adefovir dipivoxil, a diester prodrug, is rapidly converted to adefovir after oral administration. Adefovir is a monophosphate nucleotide analogue that requires intracellular conversion by cellular kinases to its virologically active diphosphate metabolite, adefovir diphosphate. Adefovir diphosphate inhibits viral DNA polymerase enzymes of various hepatitis and herpes viruses, as well as retroviruses (including HIV).
In this study, we tried to recrystallization adefovir dipivoxil particles using RESS process. The rapid expansion of supercritical solution(RESS) is process that reduces the particle size using the supercritical fluid. The size of recrystallization particles by RESS process can be controlled by adjusting parameters such as temperature, pressure, mass of solute, nozzle diameter, ratio of flow rates of SC CO2.