Poster Presentation

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Crystal engineering of pharmaceutical solids: Structure-property correlation

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Crystal engineering is one of the matured fields of solid-state chemistry with widespread applications in pharmaceutical industry. The various solid-state modifications extensively used in the pharmaceutical industry include preparation of polymorphs, salts, cocrystals, solvates, hydrates, and amorphous formulation. Salt preparation is of first priority among various solid-state formulations, and that is the reason why more than 50% of drug APIs available in the market are in the form of molecular salts. However, salt preparation depends on the acidity/basicity of the drug API and ΔpKa rule of 3. Cocrystallization is relatively new and a major revolutionary method for alteration of physicochemical properties of pharmaceutical materials when salt preparation is not feasible. This is the reason why pharmaceutical cocrystals have been widely explored in the recent past for a large number of neutral drug molecules.

Here, I will discuss case studies of few pharmaceutical solids having poor physicochemical properties and their property enhancement based on crystal engineering approach.

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