

Monitoring of Indomethacin-Saccharin Cocrystal Formation Using Anti-solvent Co-crystallization Process by in-line Near-infrared (NIR) Spectroscopy

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Pharmaceutical cocrystal has attracted much attention due to the potential for improved physicochemical properties such as solubility, stability and dissolution behavior. In our recent experiment, we prepared IMC-SAC cocrystal using anti-solvent crystallization method.

The purpose of this study was to examine NIR spectroscopy as a PAT tool to monitor the formation of indomethacin(IMC) and saccharin(SAC) cocrystals via anti-solvent co-crystallization process. The whole process of IMC-SAC cocrystal formation and growth was monitored in real-time with fiber-optic NIR probe and the collected NIR data were analyzed using the multivariate analysis. Also, off-line characterization using powder X-ray diffraction, differential scanning calorimetry and particle size analyzer was performed to comprehensively interpret the whole process combine with the multivariate analysis results.