



**Govt. Medical College,  
Thiruvananthapuram**



**Mrs Anitha Thomas**

**Title:** Co-Crystallization–An Emerging Technique for Physicochemical Property Modulation of Pharmaceuticals

**Name:** Anitha Thomas, Dr. Joyamma Varkey

**University/Organization:** College of Pharmaceutical Sciences, Govt. Medical College, Thiruvananthapuram, Kerala India.

**Abstract:**

Co-crystallization is a promising technique which provides an opportunity for the modulation of physicochemical properties of an Active Pharmaceutical Ingredient (API) without covalent modification, thus without changing its chemical composition and therapeutic effect. Changing the structure and composition of an API by co-crystallizing it with a coformer can have a significant influence on the properties and bioavailability of the drug. Co-crystals are designed on the principle of supra molecular synthesis. It provides a powerful approach for the discovery of novel pharmaceutical dosage forms. Pharmaceutical co-crystals can be defined as multi component compounds comprising of an API and one or more unique pharmaceutically acceptable coformers in a stoichiometric ratio which are solids at ambient temperature. Co-crystallization can be effectively used for solubility modulation, dissolution and bio availability modulation, dose response modulation, increasing thermodynamic stability, improving processability, decreasing hygroscopicity etc . Co-crystals can be prepared by solution methods like evaporation crystallization, slurry conversion, by grinding methods like neat grinding, liquid assisted grinding etc. Literature survey shows that not much research has been done to explore the high potential of this technique. Since co-crystallization emerges as a novel technique for modulating physicochemical properties of drugs, it finds wide acceptance among pharmaceutical researchers. It also gives an opportunity to patent new solid forms of API, increasing the intellectual property protection over a particular drug product reducing the risk of costly litigation and market erosion.

**Biography:**

Currently working as Asst. Professor of Pharmacy at Govt. Medical College, Trivandrum , Kerala, India.

M.Pharm in Pharmaceutical Chemistry from University of Kerala in 2000

Presently Ph.D Scholar at University of Kerala.

My current research interest include physico chemical property modulation techniques of pharmaceuticals.