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Cyclodextrins as reliable solubilization tools for BCS class II and IV drugs

Formulation scientists have reported myriad of conventional and advanced formulation strategies to improve the bioavailability of rate limited dissolution drugs through efficient solubilization. However, many of them are still at bench stage because industrial scale equipment is not yet available and financially difficult to be sustained. In recent years, formulator's attention was focusing on cyclodextrins as a solubilizing tool for their stubborn like bricks APIs (BCS class II and IV)). The reason is obvious: Easy to scale up and a successful presence, of both liquid and solid dosage form, on the commercially available brands. This presentation is centered on a coherent approach of insoluble APIs solubilization by cyclodextrin complexation in liquid phase as well as solid dispersions (by kneading, spray drying, lyophilization and physical mix) through an extensive array of case studies (carbamazepine, danazol, albendazole, furosemide, zotepine, zaleplon, lorazepam, progesterone, celecoxib, furosemide, valsartan and NSAIDs (flurbiprofen, ibuprofen, ketoprofen, naproxen, piroxicam). They are useful tools in solubilizing drugs delivered in high dose by IV route or at low dose by solid dosage forms. If your API good performance does not require solubilization optimization, you still wonder why cyclodextrin complexation? One should not forget that they can offer: Increased stability (physical, chemical), masked taste/odor, convert liquid forms into amorphous powders, new formulation, new routs of administration, patent extension increased shelf life, etc.

Biography

Carmen Popescu received her BS degree in Physics and PhD in Biophysics at University of Bucharest, Romania. She is a Senior Project Coordinator at Roquette America Inc. and Adjunct Associate Professor with University of Illinois at Chicago, Roosevelt University, University of Tennessee, University of Maryland. She has published over 120 research papers, book chapters and presentations on classic and new drug delivery dosage for small and large molecules. Additionally, she is a Reviewer for the *International Journal of Pharmaceutics, Journal of Pharmaceutical Sciences, European Journal of Pharmaceutics and Biopharmaceutics, Journal of Pharma & Pharmaceutical Science* and an active member of AAPS and CRS.

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