Carmen Popescu, Endocrinol Metab Syndr 2016, 5:6 (Suppl)
http://dx.doi.org/10.4172/2161-1017.C1.016

Carmen Popescu

Roquette America Inc., USA

How, why and when modified beta cyclodextrins are effective solubilizing tools for parenterals?

In finding new APIs combinatorial and high throughput chemistry strategies favor leads with hydrophobicity-driven potency properties. API high specificity and potency translates in high cLog P, high molecular weight, high melting point and very low solubility. Formulation scientists have reported myriad of conventional and advanced formulation strategies to improve solubility. However, many of them are still at bench stage because industrial scale equipment is not yet available and is 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. The reason is obvious: easy to scale up and a successful presence of parenterals as commercially available brands. This presentation is centered on a coherent approach of insoluble APIs solubilization by modified beta cyclodextrin complexation in liquid phase as well as solid dispersions (spray drying, lyophilization) 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). If your API contains more than 5 atoms (C, P, S, and N) to form the skeleton of the drug molecule, less than 5 rings, water solubility is less than 10mg/ml, melting point temperature is below 250°C, the molecular weight between 100 and 400 and has stability issues (chemical, photo, etc.) then it is the best candidate for solubilization by cyclodextrin complexation. If API has good performance does not requires solubilization optimization and you are still wondering "why cyclodextrin complexation? "one should not forget that they can offer increased stability (physical, chemical), new formulation, patent extension, increased shelf life, etc..

Biography

Carmen Popescu obtained 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 and University of Maryland. She has published over 120 research papers, book chapters and presentations on classic and new drug delivery dosage forms 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.

carmen.popescu@roquette.com

Notes: