



Applications of Nanotechnology to Pharmaceutical Product Development

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The active ingredient in finished pharmaceutical dosage forms is typically present either in molecular form (as a homogenous solution) or as solid particles of several micrometers or more in diameter. Depending on the physical chemical characteristics of the active ingredient and the route of administration, either of these two physical forms can create limitations in terms of product performance and/or safety. Nanotechnology can be used to address many of the limitations that are inherent in homogeneous solutions or solid API particles of conventional size, especially with respect to drugs that have very limited water solubility. The presentation will cover methods of manufacturing drug nanoparticles and dosage forms as well as some of the clinical benefits of using nanotechnology in drug product development..



Bill Bosch has been involved in the application of nanotechnology to pharmaceutical product development since 1992. He is currently Chief Scientific Officer at iCeutica, Inc (Philadelphia, PA and Perth, Western Australia) and leads the research and development of SoluMatrix™ technology for poorly water soluble drugs. Prior to joining iCeutica in September 2007, Bill spent approximately 16 years with Elan Drug Delivery Inc., NanoSystems LLC, and Sterling Winthrop Pharmaceuticals and most recently was Director of Pharmaceutical Research at Elan. He was a cofounder of NanoSystems LLC and a coinventor of NanoCrystal® Technology which is used in five prescription pharmaceutical products currently marketed in the U.S. Bill received his B.A. and Ph.D. degrees in chemistry from Colgate University and the University of Pennsylvania.

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