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Applications of quality by design approach in nanotechnology

Mohamed Abbas Ibrahim

King Saud University, Saudi Arabia

Nanotechnology became a widespread technology in recent years in several medical and pharmaceutical applications. The major goals in designing nanoparticles as a delivery system include enhancing bioavailability by enhancing solubility and dissolution rate, targeting the drug to specific organs and controlling drug release rate. Quality by Design (QbD) encourages the pharmaceutical industry to use risk management and science-based manufacturing principles to gain process and product understanding and thus assures quality of the product. The lecture will discuss the application of QbD approach in the pharmaceutical nanotechnology. Response surface methodology using computer based factorial design to study the effect of critical factors on various quality attributes of APG nanoparticles will be discussed. Based on the optimization procedures, risk assessment and using prior knowledge and experience will be focused to define the criticality of factors based on their impact by Ishikawa fishbone diagram and Preliminary Hazard Analysis (PHA) tool.

Biography

Mohamed Abbas Ibrahim is a professor of Pharmaceutics, Al Azhar University, Assiut, Egypt. Currently, he is a professor in Kayyali Chair for Pharmaceutical Industries, Department of Pharmaceutics, King Saud University, Saudi Arabia. He earned a PhD in Pharmaceutical Technology from the University of Regensburg, Germany, in collaboration with Al-Azhar University, Cairo, Egypt. His research interests include biomaterials as drug delivery systems, pelletization, nanotechnology and tablet technology and polymeric drug delivery systems. He supervised more than 10 master and PhD students in Egypt and Saudi Arabia. He published more than 100 research and review articles, in addition to book chapters in these areas.

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