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Microencapsulation-Effective drug delivery system

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Different drug delivery systems have been proved endeavors of the century, ensuring high patient compliance and better distribution in the body. Research on new drug delivery evolves new modes of administration of drugs. New technologies have been launched successfully in the market, which can target hard to reach tissues. Many drug delivery systems are under investigation to improve existing modes & limitations of conventional drugs. Novel drug deliver includes brain delivery, mucosal drug delivery, pulmonary drug delivery, skin drug delivery & cancer delivery. New drug systems comprise of microsponges, nanotechnology, immunoconjugates, virus, vesicular, microemulsions and nanoemulsion, cyclodextrins & polymers.

Microencapsulation is the key system, which produces microspheres consisting of both hydrophilic and hydrophobic drugs, which are entrapped by highly biocompatible & biodegradable polymers to produce controlled release of drugs over specified period of time. Microparticles range from 1 to 250 µm. Different techniques is used to manufacture micropartciles which includes physical, physico-chemical & chemical methods. Microencapsulation provides reduced doses due to higher and extended absorption with time, which has been used in peptide (insulin), anesthetics, anti-virals, hypertension & anticancer drugs. This technology should be launched globally, & can be transferred from leading companies in Europe & Asia. Regulatory compliance of microencapsulation drugs is not clear in cGMP guidelines & pharmacopeia. ICHQ7 offers basic guidance for the manufacturing of such drugs by for cGMP compliance. A harmonized guideline must be developed in order to gather all necessary regulatory requirements for microencapsulation drugs. In addition to various benefits, awareness of limitations for microencapsulation must be considered as well. In conclusion, microencapsulation is a real innovation of current period & established as novel drug delivery system.

Biography

Kamran Atif is a Pharmaceutical Chemist with additional degree in Total Quality Management in Medicines & doing Ph.D. research on Operational Excellence in Pharmaceuticals, also IRCA-UK QMS Lead Auditor with direct working experience of (+12) years in Quality Management, Quality Assurance & Technical Operations with emphasis on implementation of FDA, WHO & European Medicines Agency (EMEA) Regulations. He also worked professionally for some of the renowned pharmaceuticals & written different Pharmaceutical articles in leading magazines. He also presented various talks in the Middle East on cGMP & Benchmarking in Pharmaceuticals Operations. Currently, he is working at Arwan Pharmaceutical Industries Lebanon.

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