American Journal of Drug Delivery and Therapeutics
ISSN: 2349-7211
Open access Commentary

Methods Used for Preparation of Microparticles

Karry Molis*
Department of Pharmaceutical, University of Fudan, Japan

DESCRIPTION

Microparticles are successful delivery systems that encapsulate both water-insoluble and sparingly water-soluble agents to elicit their efficacy with a great potential attributed to their unique properties: particle size, shape, structure, drug loading, entrapment efficiency, porosity, and release profile. Handbook of Particulate Drug Delivery is an attempt to bring together, under a single cover, the promising aspects of nano- and micro-particulate materials dealing with their chemistry, biology, engineering, and their medical aspects. Nanoparticle drug delivery systems are engineered technologies that use nanoparticles for the targeted delivery and controlled release of therapeutic agents. The modern form of a drug delivery system should minimize side-effects and reduce both dosage and dosage frequency. Microparticles can be injected using hypodermic injection needles, unlike the surgical methods used for sustained release implants. A variety of methods are used to prepare microparticles including most common techniques such as phase separation (coacervation), spray drying, and solvent evaporation. Microparticles are the particles with size ranging from 1 to 1000 µm and made up of either natural or synthetic polymers. Generally the particles with a size range of 1–3 µm are used for inhalation delivery using dry powder inhalers. A particle system is a technique in game physics, motion graphics, and computer graphics that uses many minute sprites, 3D models, or other graphic objects to simulate certain kinds of "fuzzy" phenomena, which are otherwise very hard to reproduce with conventional rendering techniques – usually highly chaotic systemsIn general, particulate carriers are phagocytosed by the macrophages of the mononuclear phagocyte system (MPS), thereby localizing predominantly in the liver and spleen. However, sterically stabilized particulate carriers have extended circulation times. Drugs can be conjugated to gold nanoparticles (AuNPs) surfaces via ionic or covalent bonding and physical absorption and they can deliver them and control their release through biological stimuli or light activation. Nanoparticles have the potential to cross the blood brain barrier, which makes them extremely useful as a way to deliver drugs directly to the brain. On the other hand, this is also a major drawback because nanoparticles used to carry drugs may be toxic to the brain. Microparticles are small membrane-bound vesicles that contain diverse cellular components and are shed from cells during apoptosis or activation. They are able to mediate intracellular communication, transfer molecular components, and induce cell signaling and are believed to drive inflammation and autoimmunity. Nanoparticles as a delivery system may offer other benefits compared to microparticles, even though the immunogenicity is comparable. Nanoparticles from preformed polymers are easier to produce compared to microparticles. The high shear required for microparticles is unnecessary for nanoparticles. Microparticles are small phospholipid vesicles of less than 1 µm released into the blood flow by various types of cells such as endothelial, platelet, white or red blood cells. They are involved in many biological and physiological processes including hemostasis. Common routes of administration include oral, parenteral (injected), sublingual, topical, transdermal, inhaled, rectal, and vaginal, however drug delivery is not limited to these routes and there may be several ways to deliver medications through each route. microcapsules are utilized in beverage, bakery, meat, poultry, and dairy products. Moreover, microencapsulation has been used to increase stability, to mask bitter taste, to improve the release properties of drugs, and to provide specific drug delivery in pharmaceutical industries.

ACKNOWLEDGEMENT

The authors are thankful to the journal editor and the anonymous pundits for their helpful commentary and suggestions.

CONFLICT OF INTEREST

Authors declare no conflict of interest

Received:	01- March -2022	**Manuscript No:**	IPADT-22-13472
Editor assigned:	03- March -2022	**PreQC No:**	IPADT-22-13472 (PQ)
Reviewed:	17- March -2022	**QC No:**	IPADT-22-13472
Revised:	22- March -2022	**Manuscript No:**	IPADT-22-13472 (R)
Published:	29- March -2022	**DOI:**	10.36648/2349-7211.9.2.126

Corresponding author Karry Molis, Department of Pharmaceutical, University of Fudan, Japan, Tel: +94(91878643506); E-mail: moliskarry@gmail.com

Citation Karry Molis (2022) Methods Used for Preparation of Microparticles. Am J Drug Deliv Ther 9:126.