

# Need for Newer Drug Delivery Systems-An Opinion



**Mudasir Maqbool\***

*Department of Pharmaceutical Sciences, University of Kashmir, Inia*

**Submission:** November 29, 2018; **Published:** February 28, 2019

**\*Corresponding author:** Mudasir Maqbool, Department of Pharmaceutical Sciences, University of Kashmir, Hazratbal Srinagar-190006, Jammu and Kashmir, India

## Opinion

From the starting of the human life; the quest is going on for newer and better alternatives, and in case of drugs it will continue; continue till we find a drug with maximum efficacy and no side effects or lesser side effects. Many agents, particularly chemotherapeutic agents, have limited clinical use and are compromised by dose limiting toxic effect. Thus, the therapeutic effectiveness of the existing drugs is enhanced by formulating them in an advantageous way. In the past few years, considerable attention has been focused on the development of new drug delivery system (NDDS). The NDDS should ideally fulfill two conditions. Firstly, it should deliver the drug at a rate needed by the body, over the period of treatment. Secondly, it should readily make the availability of active entity at the site of action. Conventional dosage forms are unable to meet these conditions. In the current scenario, no available drug delivery system behaves ideally and perfectly, but concrete steps have been taken to achieve them through various novel approaches in drug delivery. Approaches are aimed to achieve this goal, by paying considerable attention either to control the distribution of drug by incorporating it in a carrier system, or by changing the structure of the drug at the molecular level, or to limit the input of the drug into the bio-environment to ensure an appropriate profile of distribution. Novel drug delivery system is aimed at providing some control, either temporal or spatial nature, or both, of drug release in the body. Novel drug delivery attempts to either sustain drug action at a predetermined and predefined rate, or by maintaining a relatively constant, effective drug level in the body with concomitant minimization of undesirable and unintended side effects. Drug action can also be localized by spatial placement of controlled release systems adjacent to, or in the diseased tissue or organ; or target drug action by using carriers or similar chemical derivative to deliver drug to target cell type.

Various types of pharmaceutical carriers such as particulate, polymeric, macromolecular, and cellular carrier are present. Particulate type carrier also termed as a colloidal carrier system, includes lipid particles (low- and high-density lipoprotein-

LDL and HDL, respectively), microspheres, nanoparticles, polymeric micelles and vesicular like liposomes, niosomes, pharmacosomes, virosomes, etc. The vesicular systems are highly ordered assemblies of one or several concentric lipid bilayers formed, when certain amphiphilic building blocks are confronted with water. Vesicles can be formulated from a diverse range of amphiphilic building blocks. Several drugs particularly chemotherapeutic agents have narrow therapeutic window. Their use in clinical practice is limited and compromised by dose limiting toxic effect. To overcome this, several attempts have been made to achieve all lofty goals through novel approaches in drug delivery. A number of novel drug delivery systems have emerged encompassing various routes of preformulation and administration, to achieve controlled and targeted drug delivery. Novel drug delivery systems attempt to work either by controlled release, or by maintaining a relatively constant, effective drug level in the body with concomitant minimization of unwanted side effects. It can also localize drug action by spatial placement of controlled release systems adjacent to, or in the diseased tissue or organ; or target drug action by using carriers or chemical derivatization to deliver drug to particular target cell type. An ideal controlled drug-delivery system should possess two features: the ability to reach its therapeutic target and the ability to release the active pharmaceutical ingredient in a controlled manner.

To obtain this objective, approaches are being evaluated and implemented by paying considerable thought to control the distribution of drug by incorporating it in a carrier system or by altering the structure of the drug at the molecular level, or to control the entry of drug into the bioenvironment to ensure an appropriate profile of distribution and delivery. The various pharmaceutical carriers are polymeric, particulate, macromolecular and cellular carrier. Particulate type carrier also termed as a colloidal carrier system; it includes lipid particles (low- and high-density lipoprotein-LDL and HDL, respectively), nanoparticles, microspheres, polymeric micelles and vesicular like liposomes, niosomes, pharmacosomes, virosomes, etc.



This work is licensed under Creative Commons Attribution 4.0 License  
DOI: [10.19080/GJN.2019.05.555651](https://doi.org/10.19080/GJN.2019.05.555651)

**Your next submission with JuniperPublishers  
will reach you the below assets**

- Quality Editorial service
- Swift Peer Review
- Reprints availability
- E-prints Service
- Manuscript Podcast for convenient understanding
- Global attainment for your research
- Manuscript accessibility in different formats  
**( Pdf, E-pub, Full Text, Audio)**
- Unceasing customer service

**Track the below URL for one-step submission**

<https://juniperpublishers.com/submit-manuscript.php>