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# Types of Drug Delivery System

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## Description

Drug delivery systems are planned technologies for the targeted drug delivery and controlled release of therapeutic agents. Drugs have been used for a long time to improve health and extend lives. The training of drug delivery has changed intensely in the past few years, and even greater changes are predicted in the near future. Biomedical engineers have contributed to some of the physiological barriers to effective drug delivery, such as transport of drugs in the circulatory system and movement of drugs over cells and tissues, and they have also developed some new methods of drug delivery that have come into clinical practice. However, with all of this development, many drugs, even those revealed using the most innovative molecular biology policies, have undesirable side effects due to drug interactions with healthy tissues that are not the target of the drug. Side effects limit our capability to design the best medications for many diseases, such as neurodegenerative diseases, cancers, and infectious diseases. Drug delivery systems regulate the amount at which a drug is released and the location in the body where the drug is unrestricted. Some systems can regulate both. Throughout history, clinicians have made an effort to direct their medications to areas of the body affected by diseases. Based on the prescription, the way it is delivered, and how our bodies react, side effects vary. These side effects can differ greatly from individual to individual in nature and severity. For example, an oral drug for seasonal allergies may cause unwanted tiredness or upset the stomach. Administering drugs locally rather than systemically, which affects the whole body, is a way to reduce side effects and drug toxicity. A topical antibacterial ointment used on the skin for a localised infection or some injections like cortisone are used to avoid some of the general side effects of these medicines. There are other methods to attain targeted drug delivery, but some medications can only be taken systemically. The chief challenges in drug delivery systems are to protect passage and discharge biologically active compounds at the correct time in a safe and reproducible way, generally at a specific target site. In the past, drug nano-carriers have offered the development of accurate medicine and, to a lesser extent, have focused on its roads into agriculture. Presently, the most effective drug delivery systems are used, like micelles, liposomes, nanomers polymeric nanoparticles, nano emulsions, and many others, exhibit a wide variety of useful properties. They have a lot of advantages and benefits. As well, they have drawbacks. So, each system was advanced to overcome the disadvantages of the other systems. The previous developed systems are Solid Lipid Nanoparticles (SLN) and Nanostructured Lipid Carriers (NLC). SLN has been advanced to reduce disadvantages, so SLN does not contain the disadvantages of other systems, but it provides all the advantages. In this study, the advantages and disadvantages of the manufacturing and application stages of drug formulations, as well as their recognition systems, have been compared with each other. Solid lipid nanoparticles have more advantages in drug delivery systems when compared to nano lipid nanoparticles.

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