



Review Article

Nanoparticle and its Relevance: A Reassessment

Chetan Rastogi¹, Nishi Shukla², Shivjee Kashyap³, Abhisek Raj⁴, Shravan Kumar Paswan⁴, Pritt Verma⁴

¹Department of Biochemistry, King George Medical University, Lucknow, Uttar Pradesh, India.

²Department of Pharmacognosy, Babu Banarasi Das Northern India Institute of Technology, Lucknow, Uttar Pradesh, India.

³Department of Pharmaceutical Chemistry, KJ College of Pharmacy, Varanasi, Uttar Pradesh, India.

⁴Pharma Talk Research Foundation, Lucknow, Uttar Pradesh, India.

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Corresponding Author:

Pritt Verma, Pharma Talk Research Foundation,
Lucknow, Uttar Pradesh, India.

E-mail Id:

preetverma06@gmail.com

Orcid Id:

<https://orcid.org/0000-0003-1433-2623>

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A B S T R A C T

Aim: To extent awareness of nanoparticles and their application.

Objective: Synthesis of nanoparticles and their determination of properties and size are most prominent in drug development as well as pharmaceutical research. To understand the concept behind this technique is necessary to understand the nanoparticles and its technical application.

Background: From many years, nanoparticles and its development for various research to target the drug and its delivery on targeted site is booming in the treatment of various disease in the current scenario. So, these techniques are utilized to change the pharmacokinetics and pharmacodynamics and release of drug delivery at a particular time.

Reason: Awareness related to the research of nanoparticles in pharmaceutical research as well as the drug industry.

Keywords: Nanoparticles, Awareness, Particulate, Preparation of Nanoparticles

Introduction

The assignment of drug transport is the liberation of drug component on the proper time in a secure and reproducible manner, typically to a particular goal site. Conventional dosage forms, including orally administered drugs and subcutaneous or intravenous injection, are the major routes for drug administration. But pills and injections offer limited control over the rate of drug release into the body; usually, they are associated with an immediate release of the drug. Consequently, to achieve therapeutic levels that extend over time, the initial concentration of the drug in the body must be high, causing peaks (often adjusted to the stay just below known levels of toxicity for the drug) that gradually diminish over time to an ineffective level. In this mode of delivery, the duration of the therapeutic effect depends on

the frequency of dose administration and the half-life of the drug. This peak and valley delivery is known to cause toxicity in certain cases, most famously with chemotherapy drugs for cancer. In recent years, the pharmaceutical and biotech industries have developed more sophisticated and potent drugs. Many of those components are proteins or DNA; the healing window (i.e., the variety of concentrations that bracket the powerful and poisonous regimes for the drug) for those pills is frequently narrow; and toxicity is discovered for awareness spikes, which renders conventional strategies of drug transport ineffective.

Also, conventional oral doses of these agents are frequently useless, because the drugs are destroyed during intestinal transit or poorly absorbed. Interest in new types of drug agents has catalyzed innovation in controlled-release drug delivery systems.

