REG.NO:D7635654-AFINJ JOHP-ISSN: 2348-7704

HEB JOHP

Journal of Hospital Pharmacy
An Official Publication of Bureau for Health & Education Status Upliftment
(Constitutionally Entitled as Health-Education, Bureau)

Stimuli-Responsive Nanoparticulate for Smart Drug Delivery System

Tapasvi Gupta[1], Shivraj Popat Jadhav[2], Md. Rayees Bakar[1]*

[1]School of Pharmacy, Suresh Gyan Vihar University, Jaipur, Rajasthan-302017, India.

[2]Divine College of Pharmacy, Satana, Nashik, Maharashtra, 423301, India.

Email Id: serviceheb@gmail.com

ABSTRACT:

This review investigates the development and application of nanoparticles that respond to stimuli, which are derived from biological sources, to develop enhanced medication delivery systems. The biobased nanoparticles are engineered to react to particular stimuli, such as temperature, pH, light, or magnetic fields, allowing for precise and regulated release of medicinal substances. This review examines different natural polymers and biomaterials as the basis for these intelligent nanocarriers, with a focus on their compatibility with living organisms and ability to break down naturally. We analyse the methods used to synthesise these nanoparticles, the techniques employed to characterise them, and their performance in both in-vitro and in-vivo settings. The review indicates that the medicine's effectiveness has been increased, the occurrence of adverse effects has been decreased, and the way the drug is processed in the body has been improved as compared to traditional methods of delivering drugs.

KEYWORDS: Stimuli-responsive, nanoparticles, smart drug delivery, pH-based nanoparticle, light-based nanoparticles.

Access this Article Online	Quick Response Code:
Website: http://www.journalofhospitalpharmacy.in	
Received on 31/07/2024	
Accepted on 8/08/2024 © HEB All rights reserved	