Review of: "[Review Article] Nanocarriers for Protein and Peptide Drug Delivery"

Zhongbin Zhang

Potential competing interests: No potential competing interests to declare.

Review comments

This article explores the treatment of various diseases through the delivery of proteins and peptide drugs using nano-carriers. It provides examples of various available nano-carrier systems, their relevant mechanisms of action, and their potential in enhancing the bioavailability, stability, and targeted delivery of proteins and peptide drugs. Overall, the research is pragmatic, serving as a valuable reference for future targeted treatments of diseases using proteins and peptides.

1. In the background, it is mentioned that "compared to traditional chemical drugs, proteins and peptide drugs exhibit superior efficacy and lower toxicity." Please provide a detailed explanation of their working mechanisms and specific examples.

2. In the section on nanoemulsions, it is mentioned that nanoemulsions exhibit optimal pharmacokinetic and biopharmaceutical properties. Please provide specific data to support this claim.

3. In the liposomes section, what technique is employed for the encapsulation of lactoferrin into liposomes, and how is it achieved?

4. In the section on protein nanoparticles, protein nanoparticles primarily consist of two categories: those where proteins are linked to carriers and those where the active therapeutic agents are recombinant proteins themselves. Please compare the advantages and disadvantages of these two types, and provide a detailed explanation.

5. In the section on polymer nanoparticles, how are polymeric nanoparticles used to deliver therapeutic proteins to precise locations, and what obstacles are encountered in the transportation process?

6. In the section on solid lipid nanoparticles, serving as alternatives to liposomes and emulsions, solid lipid nanoparticles are highlighted for their effective drug delivery, controlled release, enhanced drug stability, and improved safety. What are the drawbacks associated with solid lipid nanoparticles?

7. In the section on mucoadhesive polymers, after the hydration of mucoadhesive polymers, the polymers adhere to the mucous layer, and the prolonged retention time due to this adhesion results in higher concentrations of drug compounds. How does this extended residence time affect the therapeutic efficacy?