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Pharmaceutical nanotechnology of specific sites drug delivery system and gene therapy: A review

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Targeting sites can be achieved with different levels of sophistications i.e., first the delivery of drug to a particular organ, second to a specific cell types and third to a structure within the cell. Nanoparticles can serve as carriers for drugs, and genes have been successfully delivered to multiple targets including cancerous cells, diseased tissues and also for gene therapy. It has been widely speculated that image-guided drug delivery can remarkably enhance the localization and selective delivery of therapeutic agents to target cells and tissues. The ability to incorporate drugs or genes into a functionalized nanoparticle demonstrates a new era in pharmacotherapy for delivering drugs or genes selectively to tissues or cells. It is envisioned that the transfer of nano-engineering capability into disease therapy will provide constant and concentrated drug delivery to targeted tissues, minimizing systemic side effects and toxicity. Nano drug delivery systems hold great potential to overcome some of the barriers to efficient targeting of cells and molecules in inflammation and cancer. It is important to choose a suitable gene delivery system that can make the plasmid DNA distributed in specific nucleus and inserted into specific DNA site.

Biography

Hussien O Kadi is a Professor of Pharmacology and Therapeutics at Sana'a University, Yemen. His primary areas of research are therapeutics, pharmacology, clinical pharmacy and toxicology. He has professional experience of more than 16 years in teaching, researching and academic administration.

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