

pH responsive vesicle for intratumoral delivery

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Nanoparticles are a promising candidate in the field of drug delivery systems because they enhance the cellular uptake and reduce the side effects of a drug. They also make it possible to deliver a drug to specific cells. To increase the therapeutic efficacy of a drug, two main strategies have been advanced. In the first method, receptor-mediated nanoparticle was prepared to increase the intracellular trafficking. In a second approach, a therapeutic drug was released from an endosome or lysosome to the cytoplasm or nucleus after being taken up by the cells. Endosomes and lysosomes are acidified by proton-translocating ATPases to below pH 5.5. At this stage, nanoparticles should release their contents prior to reaching the lysosomes. To accomplish this, several studies have been conducted using pH sensitive liposomes, pH sensitive micelles, etc.