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A Review on pH-Sensitive Polymeric Nanoparticles for Cancer Therapy

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Abstract: Nanomedicine is a branch of nanotechnology used worldwide for better treatment of disease. However the basis for the therapy has many hurdles such as MDR (multi-drug resistance) in cancer, selecting drug delivery system based on tumor and many other challenges in treatment. The limitations of the therapy has been overcome by this nanotechnology on the basis of targeted delivery of the drug along with nano-medicines based on polymer which shows effective results in the chemotherapy treatment. As these nano based medicines are expected to stay for longer period in the blood and reach the target easily, pH-sensitive nanoparticles when bound to ligand have significantly effect on the biological efficacy. This review article describes various pH-sensitive nanoparticles and their mechanisms. It also describes the various applications of pH-sensitive nanoparticle in chemotherapy and their emerging opportunities. In the last few decades, there is tremendous increase of research in this area, particularly for effective pharmacological outcomes.

Keywords: Polymer, pH-sensitive, nanocarrier, liposome, micelles, cancer.

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