

عنوان مقاله:

A Review on pH and Temperature Responsive Gels in Drug Delivery

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خلاصه مقاله:

Anticancer drugs play important roles in cancer treatment. However, these drugs have many disadvantages such as poor solubility, high toxicity, and serious side effects like hair loss, nausea and vomiting, anemia etc. To overcome these drawbacks, many attempts have been made to develop novel controlled drug delivery systems. They can encapsulate the drug and release it to the cancer site without leaking into other sites. The employment of multi-responsive hydrogels as a drug delivery system have some advantages over other drug delivery systems due to their ease of preparation, high efficiency, high-water content, tunable physical, and biological properties. The most advantages of these hydrogels is the volume phase transitions in their cross-linked three-dimensional networks as exposure to external stimuli such as temperature, pH, pressure, electric field, magnetic field and light. There has been research on other drug delivery systems which can respond to changes in pH and temperature for targeted drug release. Among those, gels have been studied mostly for their dual responsiveness. This provides an update on progress of gel based dual pH and temperature responsive drug delivery systems. Various systems under these categories for targeted and controlled delivery of different classes of drugs such as antidiabetic and antibiotic drugs with special emphasis on anticancer drugs are discussed in this review.

کلمات کلیدی:

Dual Responsive, hydrogels, Nanogels, Microgels

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