

عنوان مقاله:

Using Nanocomposite Hydrogels for Delayed Drug Delivery

محل انتشار:

سومین همایش بین المللی تحقیقات در علوم و فناوری نانو (سال: 1402)

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خلاصه مقاله:

In recent decades, hydrogels with their unique properties have been used in various industries such as food, packaging, pharmaceutical, bioengineering, etc. the application of hydrogels in medical field is highlighted as they can be used in tissue engineering, contact lenses, wound dressings, and the release of therapeutic agents due to their structure similar to the extracellular matrix (ECM) and the ability to absorb water. Hydrogels are polymer compounds with a three-dimensional structure that are cross-linked which can carry medicine and release it under a controllable profile. Therefore, hydrogels are highly used in drug delivery systems. Among several type of hydrogels that are used in the field of drug delivery, nanocomposite hydrogels have better structure. This type of hydrogels acts as a drug transfer agent by using a sensitive area that allows the drug to stick to it that are in the form of nanoparticles, nanotubes, or nanocapsules (the drug is surrounded by a polymer). Many new hydrogels are designed in such a way that they perform gelation under physiological conditions. In these systems, the hydrogel is formed at the injection site without the help of cross-linking agents, which are often toxic and alter nature. However, biocompatibility of hydrogel is the most important factor to consider. In this seminar, we covered the types of hydrogel and nanomaterials that are use in drug carrier and their formation methods, along with the biochemical nature to provide sufficient information for the scientific society.

کلمات کلیدی:

Hydrogel, Drug delivery, Biocompatibility, Biomedical, Nanotechnology

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