



Latest Advances in the Study of Smart Hydrogels for Drug Delivery Systems

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Message from the Guest Editors

Dear Colleagues,

Hydrogels are reticulated three-dimensional polymeric networks with a high-water absorption capacity that enables them to reach several times their dry weight. Their responsiveness to environmental changes (temperature, pH, magnetic field, enzyme concentration) enables diffusibility control, thus making them a promising tool in the field of medicine for the release of drugs. Hydrogels that change their properties in response to an external stimulus are known as smart materials. In the case of cancer therapy, the macromolecules are usually too large to leak out and accumulate in healthy tissue. However, some of these polymeric networks may have insufficient mechanical strength when subjected to the shear rates of the circulatory system if administered intravenously. The association of a second phase to this class of intelligent hydrogels is an alternative whereby the mechanical strength of the inorganic phase is combined with the responsiveness of the organic one, thus giving rise to compounds with broader applicability. Herein, we aim to provide an overview of the latest research concerning controlled drug delivery using smart hydrogels as a platform for therapy.





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