

Polysaccharide and Zn nanoparticles based elastomeric semi-IPN nanocomposites for sustain and controlled drug delivery

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Abstract

Hydrogel based soft materials have earned considerable interest as promising systems for biomedical filed as a consequence of their numerous properties likes softness, biodegradability, and hydrophilicity. The polysaccharide and natural polysaccharide have the numerous properties like nontoxicity, biodegradability, availability. The polysaccharide gums have outstanding benefits such as renewable, biodegradable, biocompatibility, and nontoxic. The uncontrolled release of drug and sufficient strength of hydrogels are challenges for the researcher to develop the advanced materials for the drug delivery application. An addition of inorganic nanoparticles in the hydrogels leads to improve matrix properties regarding robustness and sustain drug release profile. The rheological profile of nanocomposites hydrogels were established by carrying out amplitude sweep and frequency sweep. The release profile of prepared nanocomposites hydrogels was studied by utilizing ofloxacin as a model drug in different pH media, different content of nanoparticles and different intervals.

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