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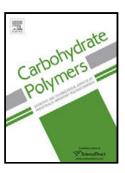
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ACCEPTED MANUSCRIPT

Synthesis of a chitosan-based photo-sensitive

2 hydrogel and its biocompatibility and biodegradability

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Highlights

- 12 Photo-sensitive azidehydroxyethyl chitosan (AZ-HECTS) was synthesized.
- 13 AZ-HECTS solution resulted in an insoluble hydrogel by 254nm UV irradiation for 90s.
- 14 AZ-HECTS hydrogels possessed favorable biocompatibility and biodegradability.
- 15 AZ-HECTS hydrogels were loaded with anticoagulant drugs heparin (Hep).
- 16 AZ-HECTS-Hep hydrogels showed positive effect on HUVEC growth and VEGF
- 17 expression.

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Abstract

Hydroxyethyl chitosan (HECTS) is one of the most important water soluble derivatives of chitosan. In this study, photo-sensitive azidehydroxyethyl chitosan (AZ-HECTS) was synthesized with grafting degree 3.4%, and its water solution resulted in an insoluble hydrogel by 254nm UV irradiation for 90s. AZ-HECTS hydrogels, with water absorption 86.21%, had little impact on growth of mouse fibroblast (L929) and presented good cell biocompatibility. Obvious sudden degradation stage, slow degradation stage and no apparent toxicity was observed after AZ-HECTS hydrogels implanted into rats,

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