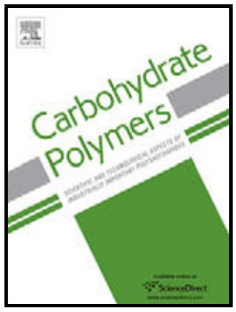

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Synthesis and Characterization of a Multi-Sensitive Polysaccharide Hydrogel for Drug Delivery

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Highlights:

A smart polysaccharide hydrogel was synthesized and characterized for drug delivery.
Semi-IPN technique was used to keep properties of both polymers.
Hydrogel sensitive to temperature, pH, and ionic strength.
The hydrogel is cell compatible.
Drug release rates can be controlled.

ABSTRACT: Salecan is a novel water soluble polysaccharide produced by a salt-tolerant strain *Agrobacterium* sp. ZX09. Poly(dimethylaminoethyl methacrylate) (PDMAEMA) is a pH, thermo, and ionic strength multi-sensitive polymer with anti-bacterial property. Here, we report a semi-interpenetrating polymer network (semi-IPN) hydrogel based on salecan and PDMAEMA. The obtained hydrogel is simultaneous sensitive to pH, ionic strength and temperature: the swelling ratio maximizes at pH 1.2 and shrinks at pH value greater