

Accepted Manuscript

Title: Fabrication and characterization of hollow starch nanoparticles by gelation process for drug delivery application

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PII: S0144-8617(17)30633-1
DOI: <http://dx.doi.org/doi:10.1016/j.carbpol.2017.06.006>
Reference: CARP 12394

To appear in:

Received date: 28-3-2017
Revised date: 1-6-2017
Accepted date: 2-6-2017

Please cite this article as: Yang, Jie., Li, Fang., Li, Man., Zhang, Shuangling., Liu, Jing., Liang, Caifeng., Sun, Qingjie., & Xiong, Liu., Fabrication and characterization of hollow starch nanoparticles by gelation process for drug delivery application. *Carbohydrate Polymers* <http://dx.doi.org/10.1016/j.carbpol.2017.06.006>

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**Fabrication and characterization of hollow starch nanoparticles by gelation process for
drug delivery application**

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HighlightsWe prepared pH-responsive hollow starch nanoparticles (HSNPs) by starch
gelation.

- HSNPs have a size range from 30 to 300 nm, with shell thickness of 5-10 nm.
- High loading efficiency (97.56%) and loading content (37.12%) for DOX were found.
- DOX-loaded HSNPs presented clear cytotoxicity for liver hepatocellular cells.
- No cytotoxicity for normal liver cells was found in HSNPs.

Abstract

Hollow nanoparticles (HNPs) have been widely regarded as controlled drug carriers
owing to their advantages, such as high drug-loading efficiency and superior control over

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