

## Accepted Manuscript

Title: Synthesis and antioxidant properties of chitosan and carboxymethyl chitosan-stabilized selenium nanoparticles

Author: Wanwen Chen Yanfang Li Shuo Yang Lin Yue  
Qixing Jiang Wenshui Xia



PII: S0144-8617(15)00573-1  
DOI: <http://dx.doi.org/doi:10.1016/j.carbpol.2015.06.064>  
Reference: CARP 10055

To appear in:

Received date: 17-3-2015  
Revised date: 8-6-2015  
Accepted date: 18-6-2015

Please cite this article as: Chen, W., Li, Y., Yang, S., Yue, L., Jiang, Q., and Xia, W., Synthesis and antioxidant properties of chitosan and carboxymethyl chitosan-stabilized selenium nanoparticles, *Carbohydrate Polymers* (2015), <http://dx.doi.org/10.1016/j.carbpol.2015.06.064>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Synthesis and antioxidant properties of chitosan and carboxymethyl chitosan-stabilized selenium nanoparticles

Wanwen Chen, Yanfang Li, Shuo Yang, Lin Yue<sup>1</sup>, Qixing Jiang, Wenshui Xia

State Key Laboratory of Food Science and Technology, School of Food Science and Technology, Jiangnan University, Lihu Road 1800, Wuxi, 214122 Jiangsu, People's Republic of China

**Abstract:** Monodispersible selenium nanoparticles (SeNPs) were synthesized by using chitosan (CS) and carboxymethyl chitosan (CCS) as the stabilizer and capping agent using a facile synthetic approach. The structure, size, morphology and antioxidant activity of the nanocomposites were characterized by Transmission electron microscopy (TEM), Ultraviolet-visible spectroscopy (UV-vis), Dynamic Light Scattering (DLS), Fourier transform infrared (FTIR), Thermogravimetric analysis (TGA). The results revealed that the monodispersible SeNPs (mean particle size of about 50 nm) were ligated with CS and CCS to form nanocomposites in aqueous solution for at least 30 days, and for 120 days the nanoparticles increased to 180 nm or so in size. The DPPH scavenging ability of CS-SeNPs was higher than that

---

<sup>1</sup> Corresponding author: yuelin@jiangnan.edu.cn.

Download English Version:

<https://daneshyari.com/en/article/7787631>

Download Persian Version:

<https://daneshyari.com/article/7787631>

[Daneshyari.com](https://daneshyari.com)