Accepted Manuscript

Title: Preparation, characterization and antioxidant property of water-soluble ferulic acid grafted chitosan

Author: Sarekha Woranuch Rangrong Yoksan

PII: S0144-8617(13)00359-7

DOI: http://dx.doi.org/doi:10.1016/j.carbpol.2013.04.006

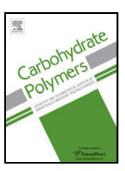
Reference: CARP 7622

To appear in:

Received date: 3-1-2013 Revised date: 5-4-2013 Accepted date: 6-4-2013

Please cite this article as: Woranuch, S., & Yoksan, R., Preparation, characterization and antioxidant property of water-soluble ferulic acid grafted chitosan, *Carbohydrate Polymers* (2013), http://dx.doi.org/10.1016/j.carbpol.2013.04.006

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.



ACCEPTED MANUSCRIPT

Preparation, characterization and antioxidant property of

2	water-soluble ferulic acid grafted chitosan
3	
4	Sarekha Woranuch ^{a,b} , Rangrong Yoksan ^{a,b,*}
5	
6	^a Department of Packaging and Materials Technology, Faculty of Agro-Industry,
7	Kasetsart University, Bangkok 10900, Thailand
8	^b Center for Advanced Studies in Nanotechnology and Its Applications in
9	Chemical, Food and Agricultural Industries, Kasetsart University, Bangkok
10	10900, Thailand
11	
12	*Corresponding author. Tel.: +66 2 562 5097; fax: +66 2 562 5046.
13	E-mail address: rangrong.y@ku.ac.th (R. Yoksan).
14	
15	
16	ABSTRACT
17	The objective of the present work was to improve the antioxidant activity and
18	water solubility of chitosan by grafting with ferulic acid through a carbodiimide-
19	mediated coupling reaction. UV-Vis spectrophotometry, FTIR, ¹ H NMR and
20	ninhydrin assay confirmed the grafting of ferulic acid onto chitosan at the C-2
21	position. Ferulic acid grafted chitosan – prepared using a mole ratio of chitosan
22	to ferulic acid of 1:1, reaction temperature of 60 $^{\circ}$ C, and reaction time of 3 h $-$
23	possessed the highest ferulic acid substitution degree, i.e. 0.37. Although ferulic

Download English Version:

https://daneshyari.com/en/article/10601525

Download Persian Version:

https://daneshyari.com/article/10601525

<u>Daneshyari.com</u>