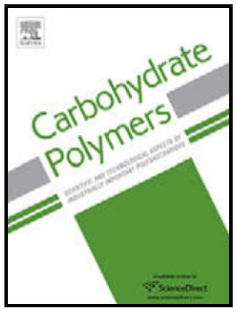

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Preparation, characterization and antioxidant property of water-soluble ferulic acid grafted chitosan

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ABSTRACT

The objective of the present work was to improve the antioxidant activity and water solubility of chitosan by grafting with ferulic acid through a carbodiimide-mediated coupling reaction. UV-Vis spectrophotometry, FTIR, ^{1}H NMR and ninhydrin assay confirmed the grafting of ferulic acid onto chitosan at the C-2 position. Ferulic acid grafted chitosan – prepared using a mole ratio of chitosan to ferulic acid of 1:1, reaction temperature of 60 °C, and reaction time of 3 h – possessed the highest ferulic acid substitution degree, i.e. 0.37. Although ferulic