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Preparation and renoprotective effects of carboxymethyl chitosan oligosaccharide on adriamycin nephropathy

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Highlights

- CMCOS with higher antioxidant activity was prepared and characterized.
- CMCOS had therapeutic effects on renal function impairment and parenchymal injury.
- CMCOS inhibited inflammation and fibrosis by regulating IL-1 β , TNF- α and TGF- β 1.
- CMCOS reduced oxidative stress by improving SOD and GSH-Px activities.

Abstract

Carboxymethyl chitosan oligosaccharide (CMCOS), the hydrolytic product of carboxymethyl chitosan, is nontoxic, easily absorbable and good antioxidant. In this study, CMCOS was prepared and its properties in adriamycin nephropathy therapy were investigated. Our results showed that CMCOS had good curative effects on renal function and parenchymal injury induced by adriamycin. CMCOS administration significantly relieved symptoms of proteinuria, hypoalbuminemia, hyperlipidemia, renal hyperplasia and histological lesions in rats ($P < 0.01$). Further exploration for the

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