United States Patent [19]

Hayes

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[54] **N,O-CARBOXYMETHYL CHITOSAN AND PREPARATIVE METHOD THEREFOR**

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[52] **U.S. Cl.** **536/20;** 426/273; 426/302

[58] **Field of Search** 536/20

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,560,480	2/1971	Kruger	536/114
3,953,608	4/1976	Vanlerberghe et al.	536/20
4,063,016	12/1977	Austin	536/20
4,195,175	3/1980	Peniston et al.	536/20
4,301,067	11/1981	Koshugi	536/20
4,304,905	12/1981	Koshugi	536/20
4,308,377	12/1981	Koshugi	536/20

OTHER PUBLICATIONS

L. A. Nud'ga et al., "O-Alkylation of Chitosan", Journal of General Chemistry of the USSR, Jun. 1, 1974, pp. 2729-2732 (Translation by Consultants Bureau, Plenum Publishing Corp. of *Zhurnal Obshchei Khimii,* vol. 43, No. 12, pp. 2752-2756, Dec. 1973).

Riccardo A. A. Muzzarelli et al., "N-(Carboxymethylidine) Chitosans and N-(Carboxymethyl) Chitosans: Novel Chelating Polyampholytes . . . ", *Carbohydrate Research,* 107 (1982) pp. 199-214, Elsivier Scientific Publishing Co.

Koshugi et al., "Chem. Abst.", vol. 95, 1981, p. 45101(m).

Hirano et al., "Chem. Abst.", vol. 95, 1981, p. 113891.

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[57] **ABSTRACT**

A novel chitosan derivative, having carboxymethyl substituents on some of both the amino and primary hydroxyl sites of the glucosamine units of the chitosan structure, is disclosed, together with methods for its preparation starting from either chitosan or chitin.

8 Claims, No Drawings