

PC 15 - Synthesis of Amphiphilic Chitosan Derivatives through the Introduction of Long-Chain Alkyls

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Compared to surfactants of low molecular weights, those derived from polysaccharides may possibly be desirable in view of low toxicity and biodegradability. Chitosan has thus been converted into amphiphilic derivatives by alkylation and subsequent succinylation. Schiff base derivatives of chitosan were prepared in aqueous acetic acid and methanol solution with aldehydes, and reduced with sodium cyanoborohydride to introduce hydrophobic long-chain alkyl groups at the amino group. The degrees of substitution for the alkyl groups were 1.0. The products were soluble in pyridine. Succinylation of N-alkylchitosans proceeded in DMSO with succinic anhydride. The degree of substitution for the succinyl group could be controlled by of the time, temperature, and amount of succinic anhydride. The resulting products were soluble in water and organic solvents.