

Synthesis and reduction of azidodeoxy derivatives of chitin.

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摘要

Abstract

Azidodeoxychitin samples were obtained in the reactions of bromodeoxychitin and chlorodeoxychitin samples with sodium azide in polar aprotic solvents. A kinetic equation for a bimolecular reversible reaction was applicable to the azidation of 6-bromo-6-deoxychitin. The rate constant for the exchange with azide ion and the equilibrium constant were $7.36 \times 10^{-3} \text{ M}^{-1} \text{ min}^{-1}$ and 57.0 at 50°C, respectively, in the binary solvent system of lithium bromide and N,N-dimethylacetamide while they were $88.5 \times 10^{-3} \text{ M}^{-1} \text{ min}^{-1}$ and 0.37, respectively, for the reaction at 60°C in methyl sulfoxide. The exchange with azide ion was slower in the case of 6-chloro-6-deoxychitin samples. Azidodeoxychitin samples were reduced with sodium borohydride in methyl sulfoxide for 24 h at 60°C. Azido groups were consumed almost completely and the selectivity for the reduction to amino groups was higher than 80%.