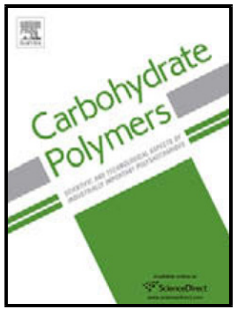

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N-[4-(*N*,*N*,*N*-trimethylammonium)benzyl]chitosan chloride: synthesis, interaction with DNA and evaluation of transfection efficiency

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Highlights

- TMAB-CS was synthesized in a wide range of the degree of substitution
- Novel cationic derivatives did not show specific cytotoxicity up to 300 μg/mL
- TMAB-CS formed stable polyplexes with DNA of 200-300 nm and ζ-potential of 20–30 mV
- Low-substituted TMAB-CS showed more pronounced transfection efficiency

Abstract

A novel cationic chitosan derivative, N-[4-(N,N,N-trimethylammonium)benzyl]chitosan chloride (TMAB-CS), with different degrees of substitution (DS) was synthesized by a chemoselective interaction of 4-formyl-N,N,N-trimethylanilinium iodide with chitosan amino groups using a