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Expedient Synthesis and Properties of 6-Deoxy-6-Amino Chitosan

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Highlights for review

- The introduction of an amine at the C-6 position of chitosan has led to the synthesis of a water-soluble chitosan derivative, 6-deoxy-6-amino chitosan.
- The solubility of 6-deoxy-6-amino chitosan in water is advantageous and opens many different avenues of application.
- A greener, shorter and scalable synthetic pathway was developed replacing the prior use of hazardous solvents and the generation of large quantities of waste.
- A model study on the glucosamine monomer was utilised for process development of the biopolymer.
- An innovative synthetic means of introducing an amine at C-6 position of 6-deoxy-6-amino chitosan resulted in a much-improved yield and quality of 6-deoxy-6-amino chitin and chitosan.
- The antimicrobial properties of the improved synthetic chitosan derivatives were similar to material from prior synthetic routes.

Abstract

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