Synthesis of well-defined fragments of the *Staphylococcus aureus* type 8 capsular polysaccharide

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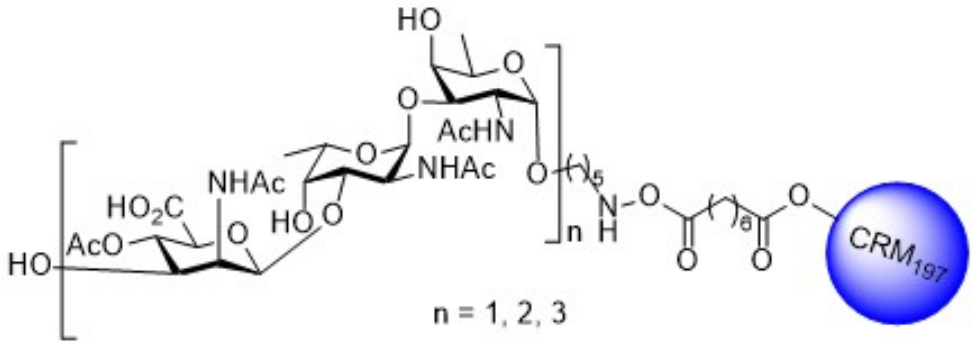
Staphylococcus aureus is a Gram-positive bacterium and it is found as an important hospital pathogen. Due to multi-drug resistant strains, which can pose significant health threats, a new course of treatment is needed. Therefore, much attention has been directed at the development of a vaccine. The cell wall of Staphylococcus aureus consists of capsular polysaccharides, wall teichoic acids and lipoteichoic acids, and all these components have been proposed as promising antigen candidates. 13 Different serotypes have been identified based on different capsular polysaccharide, of which type 5 and 8 are the most prominent. The CP8 polysaccharide is composed of trisaccharide repeating units that in turn are build up from *N*-acetyl β-D-mannosaminuronic acid, carrying a *C*-4-acetyl, *N*-acetyl-α-D-fucosamine and *N*-acetyl-α-L-fucosamine monosaccharides. The rare monosaccharides, cis-glycosidic linkages and *O*-acetylation represent significant challenges for the synthesis of CP8 fragments. Here the stereoselective assembly of well-defined type 8 capsular polysaccharide (CP8) fragments comprising a trimer, hexamer and nonamer carrying a linker, for conjugation to a carrier protein will be presented. This is the first time that fragments longer than a single repeating unit - which have been proven to be insufficient for antigenic activity - have been assembled. The fragments have been conjugated to the carrier protein CRM197 to generate conjugates that will be used for immunological studies.



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