

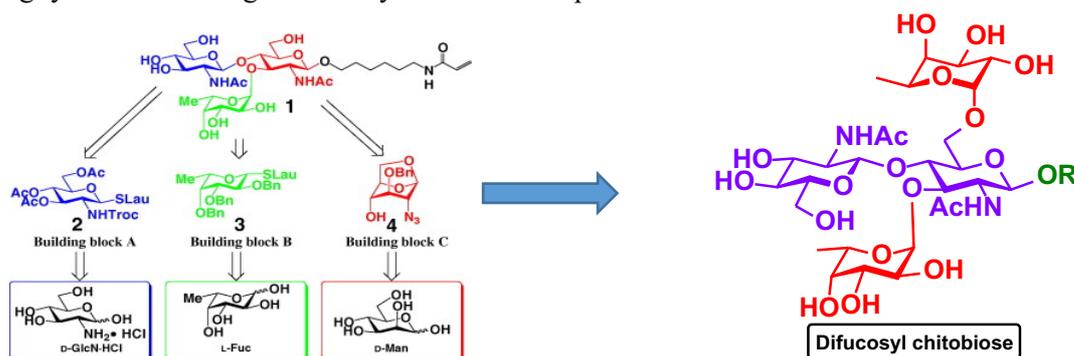
Synthetic studies of a fucosyl chitobiose as an allergen-associated carbohydrate epitope (III): Synthetic construction of tetrasaccharide unit

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Fucosyl chitobiose [GlcNAc β 1 \rightarrow 4(Fuc α 1 \rightarrow 3)GlcNAc] is known as an extremely valuable core structure of glycoconjugates such as *N*-linked glycoproteins in plants,¹ and the trisaccharide structure is suspected to be one of epitopes of allergy. A regioisomeric structure of the trisaccharide is also a fucosyl chitobiose having a unique architecture [GlcNAc β 1 \rightarrow 4(Fuc α 1 \rightarrow 6)GlcNAc], and this trisaccharidic structure is a well-known core structure ubiquitously found as *N*-linked glycoproteins in mammals. Based on previous research², our proposal is to introduce one more L-fucose residue into the trisaccharidic structure, and the tetrasaccharide will be polymerized to evaluate the biological feature of the corresponding glycopolymer.

In this stage, trisaccharide unit has been prepared from D-GlcNAc, L-Fucose and D-mannose as the starting materials. Improvement of yields for constructions of a building block A and a building block C was accomplished and building blocks A and B was condensed to yield the chitobiose unit, which was further glycosylated with building block C to afford the desired fucosyl chitobiose unit. In order to construct the difucosyl chitobiose, further chemical transformation was needed. Thus, the Hanessian's reagent system³ was applied to open the 1-6-anhydro ring. The details of the reaction conditions and the subsequent glycosylation using the Fucosyl donor will be presented.



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