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NMR Aerosolomics as a Tool to Distinguish Various Types of Aerosol Samples.

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P17 - DETERMINATION OF COMPOSITION AND ANOMERIC RATIO IN MIXTURES OF FLUORINATED OLIGOSACCHARIDES

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Deoxofluorinated carbohydrates result from replacement of one or more hydroxyl groups in carbohydrates by fluorine. These molecules play a prominent role among carbohydrate mimics due to change of electronical properties coupled with minimal steric impact caused by deoxofluorination [1].

Deoxofluorinated oligosaccharides can be prepared by reaction of selectively fluorinated glycosyl donors with appropriate glycosyl acceptors. Glycosylation frequently gives a mixture of both anomers of the target oligosaccharide. Knowledge of anomeric diastereoselectivity in glycosylation is crucial for development of stereoselective glycosylation procedures.

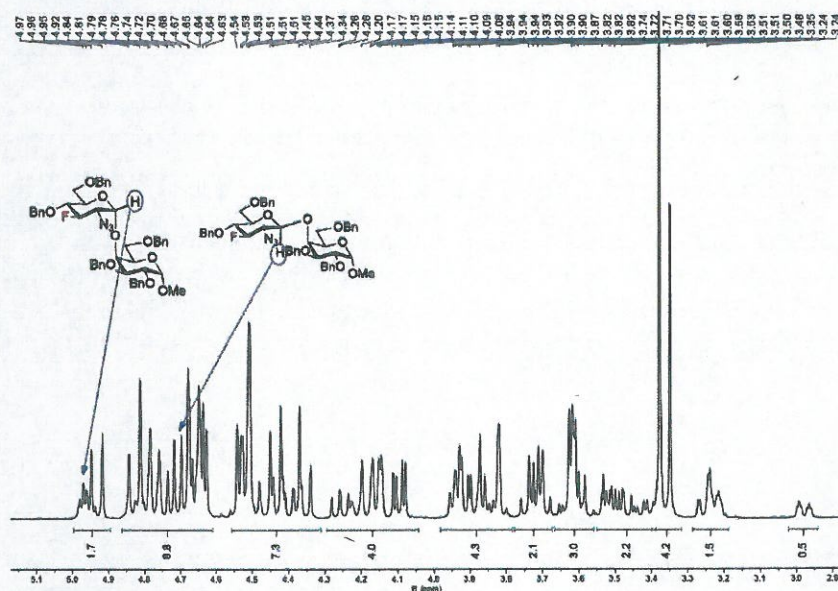


Figure 1: ^1H NMR spectrum (5.1-2.9 ppm) of methyl 4-O-(2-azido-4,6-di-O-benzyl-2,3-dideoxy-3-fluoro- α -D-glucopyranosyl)-2,3,6-tri-O-benzyl- α -D-galactopyranoside

Plenthora of glycosylation reactions was performed and sophisticated NMR approach for characterization of the coressponding products was aplied. 1D ^{19}F and ^1H NMR were utilized for accurate derermination of anomeric ratios and 2D NMR techniques as HSQC, HMBC and COSY were used to assign the signals of individual anomers. In some cases, spectrum simulation was necessary to obtain the desired parameters.

References

1. K. Dax, M. Albert, J. Ortner and B. J. Paul, *Carbohydr. Res.* **2000**, 327, 47–86.

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