SYNTHESIS OF TWO BRANCHED TRISACCHARIDES CONTAINING A CENTRAL FURANOSIDE UNIT

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Branched trisaccharides occur in a variety of biological systems and consequently there is a great interest in their synthesis[1]. Our work up to now in synthesis of such compounds dealt with the blocking and deblocking of a central pyranoside unit[2]. Here we report the use of a furanoside moiety as the central unit for synthesis of two branched trisaccharides. In a previous communication we reported[3] the use of 1,3-dichloro-1,1,3,3-tetraisopropyldisiloxane to simultaneously protect the 3,5 hydroxyls of methyl α-D-arabinofuranoside. The resulting methyl 3,5-O-(tetraisipropyldisiloxanyl)-α-D-arabinofuranoside was glycosylated with acetobromo glucose and silver triflate to give the β1 $\rightarrow$2 linked gluco-arabino disaccharide as the sole product. Following a suggestion of markiewicz[4], we carried out the partial cleavage of the doubly linked TIPDSI group by treating the disaccharide with 0.2M HCl in Dioxan and water (4:1, 0.5h, 30°C) to give in high yield the 3-silylated 5-hydroxy derivative. The free hydroxyl was treated with acetobromogalactose under Hanessian[5] conditions to yield a single product. Removal of the blocking groups gave in good yield the branched disaccharide methyl 2-O-(β-D gluco-pyranosyl)-5-O-(β-D-galactopyranosyl) -α-D-arabinofuranoside (1). Commencing with methyl β-D-ribofuranoside and using the same sequence of reactions, we obtained the branched trisaccharide methyl 2-O-(β D-glucopyranosyl)-5-O(β-D-galactopyranosyl)-β-D-ribofuranoside(2). All compounds had H and ^{13}C nmr spectra in accordance with assigned structures.

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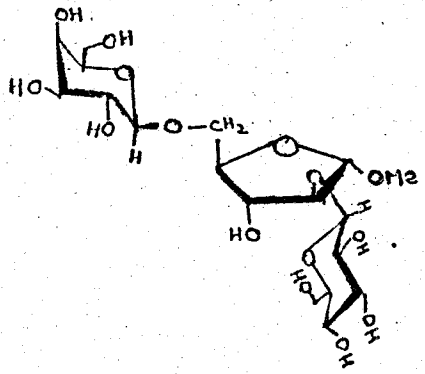

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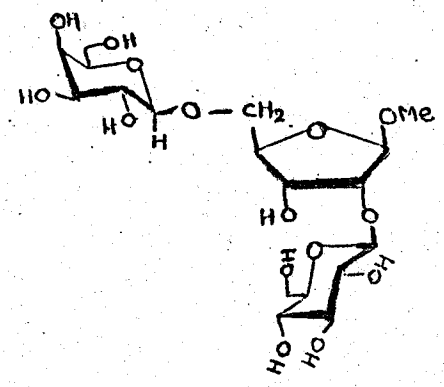

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