

Enzymatic preparation of glycosides from free sugars

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Enzymatic preparation of glycosides from free sugars

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Human milk oligosaccharides (HMOs) are important for the healthy growth of infants, since HMOs could act as the bifidus factor to obtain preferential bifidobacterial growth in intestine of breast-fed infants. The major components of HMOs are Type I sugars such as lacto-*N*-tetraose (Gal β 1-3GlcNAc β 1-3Gal β 1-4Glc, LNT), which contain lacto-*N*-triose II (GlcNAc β 1-3Gal β 1-4 Glc, LNTri) structure at their non-reducing ends. The type I dominant composition of milk oligosaccharides is a specific feature of human milk, and not other mammals. We have tried to establish a practical enzymatic method to prepare LNTri in one pot. Finally we successfully prepared LNTri from lactose and UDP-GlcNAc using β 1, 3-*N*-acetylglucosaminyltransferase (GlcNAcT) coupled with a UDP-GlcNAc-regeneration system.