

Recombinant Human B4GALT1

Cat. No. B4GALT1-706H **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Species Human

Source S.Cerevisiae

Description

Beta-1,4-galactosyltransferase 1, also known as B4GALT1, GGTB2 and beta4GalT1, is a single-pass type II membrane protein. B4GALT1 is a member of the glycosyltransferase 7 family. It is ubiquitously expressed but at very low levels in fetal and adult brain. By sequence similarity, the beta4GalTs form four groups: beta4GalT1 and beta4GalT2, beta4GalT3 and beta4GalT4, beta4GalT5 and beta4GalT6, and beta4GalT7. B4GALT1 is an enzyme that functions in the synthesis of glycoconjugates. It has two flexible loops, one short and one long. Upon binding a metal ion and UDP-galactose, the loops change from an open to a closed conformation, repositioning residues to lock the ligands in place. B4GALT1 is one of the best-studied glycosyltransferases. It plays a key role in the synthesis of selectin ligands. B4GALT1 may play an important role in the inflammation reaction. Defects in B4GALT1 are the cause of congenital disorder of glycosylation type 2D (CDG2D). CDGs are a family of severe inherited diseases caused by a defect in protein N-glycosylation.

Form powder.

Color slightly yellow.

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Foreign Activity	β -galactosidase $\leq 0.1\%$.
Components	contains Tris buffer salts and BSA.
Other Notes	Enzyme catalyst for the stereoselective synthesis of galactosyl carbohydrates ^{1,2,3,4} .
Unit Definition	1 U correspond to the amount of enzyme which transfers 1 μ mol galactose from UDP-galactose to D-glucose per minute at pH 8.4 and 30°C in the presence of α -lactalbumin.
Storage Temp	-20°C.
Pathways	Galactose metabolism; Glycosaminoglycan biosynthesis - keratan sulfate; Glycosphingolipid biosynthesis - lacto and neolacto series; Metabolic pathways; N-Glycan biosynthesis

GENE INFORMATION

Gene Name	B4GALT1 UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 1 [Homo sapiens]
Synonyms	B4GALT1; UDP-Gal:betaGlcNAc beta 1,4- galactosyltransferase, polypeptide 1; GT1; GTB; CDG2D; GGTB2; B4GAL-T1; MGC50983; beta4Gal-T1; DKFZp686N19253; B4GALT1; beta-1,4-galactosyltransferase 1; beta-1,4-GalTase 1; glycoprotein-4-beta-galactosyltransferase 2; UDP-Gal:beta-GlcNAc beta-1,4-galactosyltransferase 1; UDP-galactose:beta-N-acetylglucosamine beta-1,4-galactosyltransferase 1; EC 2.4.1.22; EC 2.4.1.38; EC 2.4.1.90
Gene ID	2683
mRNA Refseq	NM_001497

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Protein Refseq	NP_001488
MIM	137060
UniProt ID	P15291
Chromosome Location	9p13
Function	N-acetyllactosamine synthase activity; UDP-galactosyltransferase activity; beta-N-acetylglucosaminylglycopeptide beta-1,4-galactosyltransferase activity; cytoskeletal protein binding; lactose synthase activity; metal ion binding; transferase activity, transferring glycosyl groups
PDB rendering based on 1nf5.	