Recombinant Human beta-1,4-galactosyltransferase 1 Protein, His-tagged

Cat. No. B4GalT1-02H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human beta-1,4-Galactosyltransferase 1 (B4GalT1) Y285L with N-His tag was expressed in HEK293.
Species	Human
Source	HEK293
ProteinLength	44-398 aa
Description	This gene is one of seven beta-1,4-galactosyltransferase (beta4GalT) genes. They encode type II membrane-bound glycoproteins that appear to have exclusive specificity for the donor substrate UDP-galactose; all transfer galactose in a beta1,4 linkage to similar acceptor sugars: GlcNAc, Glc, and Xyl. Each beta4GalT has a distinct function in the biosynthesis of different glycoconjugates and saccharide structures. As type II membrane proteins, they have an N-terminal hydrophobic signal sequence that directs the protein to the Golgi apparatus and which then remains uncleaved to function as a transmembrane anchor. By sequence similarity, the beta4GalTs form four groups: beta4GalT1 and beta4GalT2, beta4GalT3 and beta4GalT4, beta4GalT5 and beta4GalT6, and beta4GalT7. This gene is unique among the beta4GalT genes because it encodes an enzyme that participates both in glycoconjugate and lactose biosynthesis. For the first activity, the enzyme adds galactose to N-acetylglucosamine residues that are either monosaccharides or the nonreducing ends of glycoprotein carbohydrate chains. The second activity is

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	restricted to lactating mammary tissues where the enzyme forms a heterodimer with alpha-lactalbumin to catalyze UDP-galactose + D-glucose <=> UDP + lactose. The two enzymatic forms result from alternate transcription initiation sites and post-translational processing. Two transcripts, which differ only at the 5' end, with approximate lengths of 4.1 kb and 3.9 kb encode the same protein. The longer transcript encodes the type II membrane-bound, trans-Golgi resident protein involved in glycoconjugate biosynthesis. The shorter transcript encodes a protein which is cleaved to form the soluble lactose synthase.
Tag	N-His
Molecular Mass	40 kDa
AA Sequence	HHHHHHHHGRDLSRLPQLVGVSTPLQGGSNSAAAIGQSSGELRTGGARPPPPLGA SSQPRPGGDSSPVVDSGPGPASNLTSVPVPHTTALSLPACPEESPLLVGPMLIEFN MPVDLELVAKQNPNVKMGGRYAPRDCVSPHKVAIIIPFRNRQEHLKYWLYYLHPVLQ RQQLDYGIYVINQAGDTIFNRAKLLNVGFQEALKDYDYTCFVFSDVDLIPMNDHNAY RCFSQPRHISVAMDKFGFSLPYVQLFGGVSALSKQQFLTINGFPNNYWGWGGEDD DIFNRLVFRGMSISRPNAVVGRCRMIRHSRDKKNEPNPQRFDRIAHTKETMLSDGLN SLTYQVLDVQRYPLYTQITVDIGTPS
Endotoxin	< 1 EU/μg by LAL.
Purity	> 90 % by SDS-PAGE
Storage	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Concentration	1 mg/mL by BCA

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Storage Buffer	Sterile 20mM Tris, 100mM NaCl, 10mM TCEP, pH 8.0.

GENE INFORMATION

Gene Name	B4GALT1 beta-1,4-galactosyltransferase 1 [Homo sapiens (human)]
Official Symbol	B4GALT1
Synonyms	B4GALT1; beta-1,4-galactosyltransferase 1; GGTB2; beta-1,4-galactosyltransferase 1; beta4Gal T1; lactose synthase; 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; GT1; GTB; CDG2D; B4GAL-T1; beta4Gal-T1; MGC50983; DKFZp686N19253
Gene ID	2683
mRNA Refseq	NM_001497
Protein Refseq	NP_001488
MIM	137060
UniProt ID	P15291

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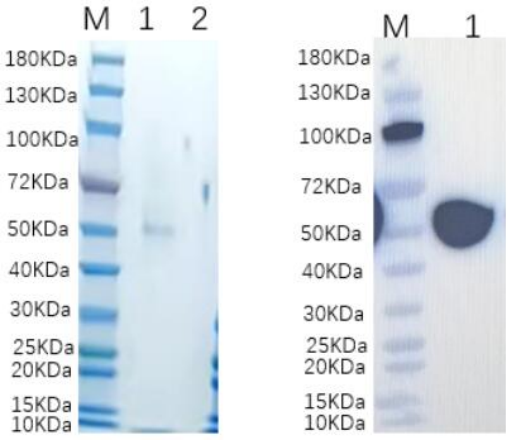
Reducing 12 % SDS-PAGE (CBB stained) and WB (Anti-His Mouse Monoclonal antibody) analysis profiles of purified B4GalT1.



1. B4GalT1
2. BSA

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