

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human β -1,4-Galactosyltransferase 1/B4GalT1 in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG _{2B} Clone # 394706
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human β -1,4-Galactosyltransferase 1/B4GalT1 long isoform Gly44-Ser398 Accession # P15291
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	1 μ g/mL	Recombinant Human β 4GalT1/ β -1,4-Galactosyltransferase 1 (Catalog # 3609-GT)
Immunoprecipitation	25 μ g/mL	Conditioned cell culture medium spiked with Recombinant Human β 4GalT1/ β -1,4-Galactosyltransferase 1 (Catalog # 3609-GT), see our available Western blot detection antibodies

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

β 4GalT1 is one of seven β 1,4 galactosyltransferases that transfer galactose in a β 1,4 linkage to acceptor sugars including GlcNAc, and Glc, and Xyl. By sequence similarity, the β 4GalTs form four groups: β 4GalT1 and β 4GalT2, β 4GalT3 and β 4GalT4, β 4GalT5 and β 4GalT6, and β 4GalT7 (1). β 4GalT1 is unique among the seven enzymes because it can be expressed either as membrane associated form or secreted form (2). The secreted form is restricted to lactating mammary tissues where the enzyme forms a heterodimer with α -lactalbumin to catalyze the synthesis of lactose (3). The membrane form can reside either in the Golgi apparatus, where it adds galactose to N-acetylglucosamine residues, or on cell surface, where it functions as a recognition molecule during a variety of cell to cell and cell to matrix interactions, by binding to specific oligosaccharide ligands on opposing cells or in the extracellular matrix (4). The two enzymatic forms result from alternate transcription initiation sites and post-translational processing (5). Defects in β 4GalT1 are the cause of congenital disorder of glycosylation type 2D (CDG2D) (6). The amino acid sequence of human B4GALT1 is 88%, 87% and 71% identical to that of rat, mouse/canine and chicken.

References:

1. Amado, M. *et al.* (1999) *Biochim. Biophys. Acta.* **1473**:35.
2. Yamaguchi, N and Fukuda, M.N. (1995) *J. Biol. Chem.* **270**:12170.
3. Appert, H.E. *et al.* (1986) *Biochem. Biophys. Res. Commun.* **138**:224.
4. Lopez, L.C. *et al.* (1991) *J. Biol. Chem.* **266**:15984.
5. Mengle-Gaw, L. *et al.* (1991) *Biochem. Biophys. Res. Commun.* **176**:1269.
6. Hansske, B. *et al.* (2002) *J. Clin. Invest.* **109**:725.