Beta-Galactosidase (GLB1) Recombinant Antibody – Human

PRODUCT OVERVIEW

Product Name	Beta-galactosidase (GLB1), Recombinant Antibody
Full Product Name	Anti-Beta-galactosidase [13R4]
Product Gene Name	GLB1 recombinant antibody
Product Synonym Names	beta-gal; Acid beta galactosidase; Beta galactosidase 1; beta-galactosidase; beta-gal; EBP; ELNR1; Galactosidase beta 1; GLB1; MPS4B
Isotype	Human IgG1, lambda
Clone Number	13R4
Host	Human
Species Reactivity	E Coli
Purity/Purification	Protein A Affinity Purified
Concentration	1 mg/ml (lot specific)
Specificity	13R4 recognizes wild-type E Coli beta-galactosidase.
Preparation and Storage	Store at 4°C for up to 3 months. For longer storage, aliquot and store at -20°C.
OMIM	M22590 mRNA
3D Structure	ModBase 3D Structure for P00722
Animal-free Manufacturing Platform	The recombinant antibody is manufactured using a recombinant, mammalian HEK293-based expression platform. The manufacturing platform is animal-free and animal component-free.
Buffer Composition	PBS only with 0.02% Proclin 300.
Immunogen	Beta-galactosidase.
Chimeric Use Statement	This is a chimeric antibody created as part of a panel offering antibodies of the same specificity in different formats (species, isotype, subtype and modified versions) for use as isotype controls.
Note of Publication	Describes the parent scFv13 antibody improved by four rounds of random mutagenesis leading to optimised scFv13R4; scFv13R4 was selected for its capacity to fold correctly in a reducing environment such as the cytoplasm.
Product Categories/Family for GLB1 recombinant antibody	Neg control; Bacteria; Isotype control
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for GLB1 recombinant antibody	Western Blot (WB), Flow Cytometry (FC/FACS), Negative Control
Related Product Information for GLB1 recombinant antibody	Recombinant monoclonal antibody to Beta-galactosidase. Manufactured using a Recombinant Platform with variable regions (i.e. specificity) from the scFv 13R4. This is a chimeric antibody created as part of a panel offering antibodies of the same specificity in different formats (species, isotype, subtype and modified versions) for use as isotype controls.
Product References and Citations for GLB1 recombinant antibody	Martineau P, Jones P, Winter G. Expression of an antibody fragment at high levels in the bacterial cytoplasm. J Mol Biol. 1998 Jul 3; 280(1):117-27. PMID:9653035

Other Notes	Small volumes of GLB1 recombinant antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for GLB1 purchase	MBS488095 is a recombinant antibody targeting GLB1. Also known as Anti-Beta-galactosidase [13R4]. Reactive in E Coli. Host: Human.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for GLB1. It may not necessarily be applicable to this product.

NCBI GI #	215273939
NCBI GeneID	2720
UniProt Primary Accession #	P00722
UniProt Secondary Accession #	P16279; B2R7H8; B7Z6B0
UniProt Related Accession #	P16278
NCBI Official Full Name	Beta-galactosidase
NCBI Official Synonym Full Names	galactosidase beta 1
NCBI Official Symbol	GLB1
NCBI Official Synonym Symbols	EBP; ELNR1; MPS4B
UniProt Protein Name	Beta-galactosidase
UniProt Synonym Protein Names	Acid beta-galactosidase; Lactase; Elastin receptor 1
Protein Family	Beta-galactosidase
UniProt Gene Name	GLB1
UniProt Synonym Gene Names	ELNR1; Lactase
UniProt Entry Name	BGAL_HUMAN
NCBI Protein Information	beta-galactosidase
NCBI Summary for GLB1	This gene encodes a member of the glycosyl hydrolase 35 family of proteins. Alternative splicing results in multiple transcript variants, at least one of which encodes a preproprotein that is proteolytically processed to generate the mature lysosomal enzyme. This enzyme catalyzes the hydrolysis of a terminal beta-linked galactose residue from ganglioside substrates and other glycoconjugates. Mutations in this gene may result in GM1-gangliosidosis and Morquio B syndrome. [provided by RefSeq, Nov 2015]

UniProt Comments for GLB1	GLB1: Cleaves beta-linked terminal galactosyl residues from gangliosides, glycoproteins, and glycosaminoglycans. Defects in GLB1 are the cause of GM1-gangliosidosis type 1 (GM1G1); also known as infantile GM1-gangliosidosis. GM1-gangliosidosis is an autosomal recessive lysosomal storage disease marked by the accumulation of GM1 gangliosides, glycoproteins and keratan sulfate primarily in neurons of the central nervous system. GM1G1 is characterized by onset within the first three months of life, central nervous system degeneration, coarse facial features, hepatosplenomegaly, skeletal dysmorphology reminiscent of Hurler syndrome, and rapidly progressive psychomotor deterioration. Urinary oligosaccharide levels are high. It leads to death usually between the first and second year of life. Defects in GLB1 are the cause of GM1-gangliosidosis type 2 (GM1G2); also known as late infantile/juvenile GM1- gangliosidosis. GM1G2 is characterized by onset between ages 1 and 5. The main symptom is locomotor ataxia, ultimately leading to a state of decerebration with epileptic seizures. Patients do not display the skeletal changes associated with the infantile form, but they nonetheless excrete elevated amounts of beta-linked galactose-terminal oligosaccharides. Inheritance is autosomal recessive. Defects in GLB1 are the cause of GM1-gangliosidosis type 3 (GM1G3); also known as adult or chronic GM1- gangliosidosis. GM1G3 is characterized by a variable phenotype. Patients show mild skeletal abnormalities, dysarthria, gait disturbance, dystonia and visual impairment. Visceromegaly is absent. Intellectual deficit can initially be mild or absent but progresses over time. Inheritance is autosomal recessive. Defects in GLB1 are the cause of mucopolysaccharidosis type 4B (MPS4B); also known as Morquio syndrome B. MPS4B is a form of mucopolysaccharidosis type 4, an autosomal recessive lysosomal storage disease characterized by intracellular accumulation of keratan sulfate and chondroitin-6-sulfate. Key clinical features include short stature, skeletal dysplasia, dental anomalies, and corneal clouding. Intelligence is normal and there is no direct central nervous system involvement, although the skeletal changes may result in neurologic complications. There is variable severity, but patients with the severe phenotype usually do not survive past the second or third decade of life. Belongs to the glycosyl hydrolase 35 family. 3 isoforms of the human protein are produced by alternative splicing. Protein type: Carbohydrate Metabolism - galactose; EC 3.2.1.23; Glycan Metabolism - glycosaminoglycan degradation; Glycan Metabolism - glycosphingolipid biosynthesis - ganglio series; Glycan Metabolism - other glycan degradation; Hydrolase; Lipid Metabolism - sphingolipid Chromosomal Location of Human Ortholog: 3p21.33 Cellular Component: cytoplasm; Golgi apparatus; intracellular membrane-bound organelle; lysosomal lumen; vacuole Molecular Function: beta-galactosidase activity; exo-alpha-sialidase activity; protein binding Biological Process: cellular carbohydrate metabolic process; glycosaminoglycan catabolic process; glycosphingolipid metabolic process; keratan sulfate catabolic process Disease: Gm1-gangliosidosis, Type I; Gm1-gangliosidosis, Type Ii; Gm1-gangliosidosis, Type Iii; Mucopolysaccharidosis Type Ivb
Research Articles on GLB1	**1.** This study shows that moderate widespread expression of betagal in the CNS of GM1 gangliosidosis mice is sufficient to achieve significant biochemical impact with phenotypic amelioration and extension in lifespan
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