abcam

Product datasheet

Anti-Alpha Dystroglycan antibody [2238] ab106110

5 References 1 Image

Overview

Product name	Anti-Alpha Dystroglycan antibody [2238]
Description	Mouse monoclonal [2238] to Alpha Dystroglycan
Host species	Mouse
Specificity	**ab106110 is specific for a glycoepitope present on brain Alpha Dystroglycan. The clone was generated using enriched bovine brain Alpha dystroglycan, and has been shown to bind Alpha Dystroglycan from enriched mouse, rat, rabbit and bovine brain tissues but did not bind Alpha Dystroglycan from striated muscle, peripheral nerve or kidney (PMID: 16709410).**
Tested applications	**Suitable for:** WB
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Full length native protein (purified) corresponding to Cow Alpha Dystroglycan. Purified bovine brain alpha-dystroglycan Database link: **O18738**
Epitope	Glycoepitope on brain bovine alpha-dystroglycan
Positive control	WB: Human brain tissue lysate; SH-SY5Y cell lysate; Mouse brain tissue lysate; Rat brain tissue lysate.
General notes	The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C. Avoid freeze / thaw cycles.
Storage buffer	Preservative: 0.02% Sodium azide Constituents: 0.1% BSA, PBS
Purity	Protein G purified

Purification notes	0.2 µm filtered antibody solution
Clonality	Monoclonal
Clone number	2238
Isotype	IgG2b

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab106110 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/100. Predicted molecular weight: 97 kDa.

Target

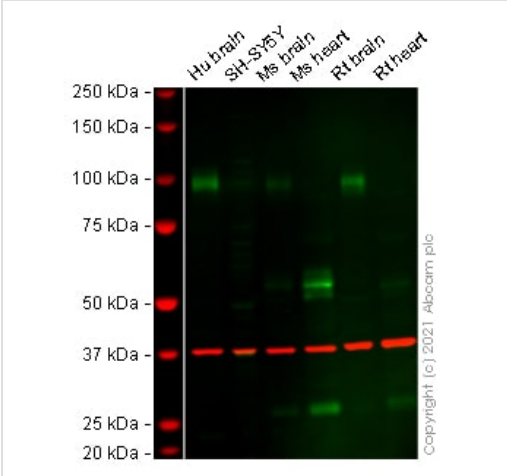
Function	The dystroglycan complex is involved in a number of processes including laminin and basement membrane assembly, sarcolemmal stability, cell survival, peripheral nerve myelination, nodal structure, cell migration, and epithelial polarization. Alpha-dystroglycan is an extracellular peripheral glycoprotein that acts as a receptor for both extracellular matrix proteins containing laminin-G domains, and for certain adenoviruses. Receptor for laminin-2 (LAMA2) and agrin in peripheral nerve Schwann cells. Also acts as a receptor for M.leprae in peripheral nerve Schwann cells but only in the presence of the G-domain of LAMA2, and for lymphocytic choriomeningitis virus, Old World Lassa fever virus, and clade C New World arenaviruses. Beta-dystroglycan is a transmembrane protein that plays important roles in connecting the extracellular matrix to the cytoskeleton. Acts as a cell adhesion receptor in both muscle and non-muscle tissues. Receptor for both DMD and UTRN and, through these interactions, scaffolds axin to the cytoskeleton. Also functions in cell adhesion-mediated signaling and implicated in cell polarity.
Tissue specificity	Expressed in a variety of fetal and adult tissues. In epidermal tissue, located to the basement membrane. Also expressed in keratinocytes and fibroblasts.
Involvement in disease	Defects in DAG1 are the cause of muscular dystrophy-dystroglycanopathy limb-girdle type C7 (MDDGC7) [MIM:613818]. An autosomal recessive muscular dystrophy showing onset in early childhood, and associated with mental retardation without structural brain anomalies. Note=MDDGC7 is caused by DAG1 mutations that interfere with normal post-translational processing, resulting in defective DAG1 glycosylation and impaired interactions with extracellular-matrix components. Other muscular dystrophy-dystroglycanopathies are caused by defects in enzymes involved in protein O-glycosylation.
Sequence similarities	Contains 1 peptidase S72 domain.
Post-translational modifications	O- and N-glycosylated. Alpha-dystroglycan is heavily O-glycosylated comprising of up to two thirds of its mass and the carbohydrate composition differs depending on tissue type. Mucin-type O-glycosylation is important for ligand binding activity. O-mannosylation of alpha-DAG1 is found in high abundance in both brain and muscle where the most abundant glycan is Sia-alpha-2-3-Gal-beta-1-4-Glc-NAc-beta-1-2-Man. In muscle, glycosylation on Thr-379 by a phosphorylated O-mannosyl glycan with the structure 2-(N-acetylamido)-2-deoxygalactosyl-beta-1,3-2-(N-acetylamido)-2-deoxyglucosyl-beta-1,4-6-phosphomannose is mediated by like-

acetylglucosaminyltransferase (LARGE) protein and is required for laminin binding. O-mannosylation is also required for binding lymphocytic choriomeningitis virus, Old World Lassa fever virus, and clade C New World arenaviruses. The O-glycosyl hexose on Thr-367, Thr-369, Thr-372, Thr-381 and Thr-388 is probably mannose. O-glycosylated in the N-terminal region with a core 1 or possibly core 8 glycan. The beta subunit is N-glycosylated.
Autolytic cleavage produces the alpha and beta subunits. In cutaneous cells, as well as in certain pathological conditions, shedding of beta-dystroglcan can occur releasing a peptide of about 30 kDa.
SRC-mediated phosphorylation of the PPXY motif of the beta subunit recruits SH2 domain-containing proteins, but inhibits binding to WWW domain-containing proteins, DMD and UTRN. This phosphorylation also inhibits nuclear entry.

Cellular localization

Secreted > extracellular space and Cell membrane. Cytoplasm > cytoskeleton. Nucleus > nucleoplasm. The monomeric form translocates to the nucleus via the action of importins and depends on RAN. Nuclear transport is inhibited by Tyr-892 phosphorylation. In skeletal muscle, this phosphorylated form locates to a vesicular internal membrane compartment. In peripheral nerves, localizes to the Schwann cell membrane. Colocalizes with ERM proteins in Schwann-cell microvilli.

Images



Western blot - Anti-Alpha Dystroglycan antibody [2238] (ab106110)

All lanes : Anti-Alpha Dystroglycan antibody [2238] (ab106110) at 1/100 dilution

Lane 1 : Human brain tissue lysate
Lane 2 : SH-SY5Y cell lysate
Lane 3 : Mouse brain tissue lysate
Lane 4 : Mouse heart tissue lysate
Lane 5 : Rat brain tissue lysate
Lane 6 : Rat heart tissue lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

Predicted band size: 97 kDa
Observed band size: 75-100 kDa

Lanes 1 - 6: Merged signal (red and green). Green - ab106110 observed at 75-100 kDa. Red - loading control **ab181602** (Rabbit Anti-GAPDH antibody [EPR16891]) observed at 37 kDa.

ab106110 was shown to react with DAG1 in Western blot. Membranes were blocked in fluorescent western blot (TBS-based) blocking solution before incubation with ab106110 and **ab181602**

(Rabbit Anti-GAPDH antibody [EPR16891]) overnight at 4 °C at a 1 in 100 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

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