

**MONOCLONAL ANTIBODY TO  
BOVINE BRAIN ALPHA-DYSTROGLYCAN (alpha-DG)**  
clone 2238



**Catalog no** HM5010 (lot number and expiry date are indicated on the label)

**Description** Monoclonal antibody 2238 recognizes a glycoepitope unique to brain alpha-dystroglycan. Alpha-dystroglycan (alpha-DG), also known as dystrophin-associated glycoprotein, is a laminin-binding protein of ~156 kDa (including glyco-groups). Alpha-DG is a component of the dystroglycan complex, which is involved in early development, morphogenesis and in the pathogenesis of muscular dystrophies. Alpha- and beta-DG are encoded by a single gene and are derived from a precursor polypeptide by posttranslational cleavage. Beta-DG is an integral membrane protein, whereas alpha-DG is membrane-associated through its noncovalent interaction with the extracellular domain of beta-DG. The alpha- and beta-DGs provide important physical linkages between components of basement membranes and cytoplasmic proteins that bind to the actin cytoskeleton. Alpha-DG is a heavily glycosylated, mucin-like protein anchored on the extracellular surface of the myotube, where it may provide linkage between the sarcolemma and extracellular matrix (ECM). Alpha-DG is expressed in a variety of fetal and adult tissues. Tissue-specific glycosylation modifies the laminin specificity of alpha-DG. The muscle and nonmuscle isoforms of dystroglycan differ by carbohydrate moieties but not protein sequence. Alpha-DG has been shown to colocalize with laminin in skeletal and cardiac muscle and a number of other cells including peripheral nerve, astrocytes, Purkinje neurons and kidney epithelium. Laminin-10/11 was shown to bind preferentially to brain alpha-DG. In Duchenne muscular dystrophy, the expression of alpha-DG is dramatically reduced leading to a loss of linkage between the sarcolemma and extracellular matrix, rendering muscle fibers more susceptible to necrosis. In the central nervous system, dystroglycan functions as a dual receptor for agrin and laminin-2 for instance in the Schwann cell membrane. Furthermore, defects in dystroglycan are central to the pathogenesis of structural and functional brain abnormalities seen in congenital muscular dystrophies (CMD). The monoclonal antibody 2238 is specific for a glycoepitope on brain bovine alpha-dystroglycan, which is absent on alpha-dystroglycan expressed in all other tissues.

**Aliases** Dystrophin-associated glycoprotein 1 (DAG1)

**Species** Mouse IgG<sub>2b</sub>

Cross reactivity	Cross reactant	Reactivity
	Rabbit	Yes
	Mouse	Yes
	Rat	Yes
	Human	Yes

**Formulation** 1 ml (100 µg/ml) 0.2 µm filtered antibody solution in PBS, containing 0.1% bovine serum albumin and 0.02% sodium azide.

**Application**

	F	FC	FS	IA	IF	IP	P	W
Yes				•			•	• <sup>a</sup>
No								
N.D.	•	•	•		•	•		

a = it recognizes alpha-DG as protein of ~130 kD, especially after enrichment of the lysates for dystroglycans  
N.D.= Not Determined; F = Frozen sections; FC = Flow Cytometry; FS = Functional Studies; IA = Immuno Assays; IF = Immuno Fluorescence; IP = Immuno Precipitation; P = Paraffin sections; W = Western blot

**Use** For immunohistology, and Western blotting, dilutions to be used depend on detection system applied. It is recommended that users test the reagent and determine their own optimal dilutions. The typical starting working dilution is 1:50.

**Storage and stability** Product should be stored at 4°C. Under recommended storage conditions, product is stable for one year

**Precautions** For research use only. Not for use in or on humans or animals or for diagnostics. It is the responsibility of the user to comply with all local/state and federal rules in the use of this product. Hycult Biotech is not responsible for any patent infringements that might result from the use or derivation of this product.

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**References**

1. McDearmon E et al; Brain alpha-dystroglycan displays unique glycoepitopes and preferential binding to laminin-10/11. FEBS Letters 2006, 580: 3381

**Also available**

HM5001	Monoclonal antibody against Nitrotyrosine, clone HM.11
HM5009	Monoclonal antibody against Ubiquitin, clone Ubi-1
HM2005	Monoclonal antibody against Human TNF RI, clone MR1-2
HM2007	Monoclonal antibody against Human TNF RII, clone MR2-1
HM1009	Monoclonal antibody against Mouse TNF RI, clone HM104