

# $\alpha$ -dystroglycan (VIA4<sub>1</sub>): sc-53986

## BACKGROUND

Dystroglycan (DG) is a cell surface receptor for several extracellular matrix molecules including laminins, Agrin and Perlecan. Dystroglycan function is required for the formation of basement membranes in early development and the organization of Laminin on the cell surface.  $\alpha$ -dystroglycan is a membrane-associated, extracellular glycoprotein that is anchored to the cell-membrane by binding to the transmembrane glycoprotein  $\alpha$ -dystroglycan to form an  $\alpha/\beta$ -dystroglycan-complex. Additionally, dystroglycan is part of a multi-molecular complex, where it associates with dystrophin, at the sarcolemma, to form the dystrophin-associated protein complex, or with utrophin, at the neuromuscular junction, to form the utrophin-associated protein complex. Dystroglycan is also thought to participate in the clustering of nicotinic acetylcholine receptors at the neuromuscular junction.

## REFERENCES

- Cote, P.D., et al. 1999. Chimaeric mice deficient in dystroglycans develop muscular dystrophy and have disrupted myoneural synapses. *Nat. Genet.* 23: 338-342.
- Seifert, J., et al. 2000. Syntheses of  $\alpha$ -dystroglycan derived glycosyl amino acids carrying a novel mannosyl serine/threonine linkage. *Glycoconj. J.* 17: 407-423.

## CHROMOSOMAL LOCATION

Genetic locus: DAG1 (human) mapping to 3p21.31; Dag1 (mouse) mapping to 9 F2.

## SOURCE

$\alpha$ -dystroglycan (VIA4<sub>1</sub>) is a mouse monoclonal antibody raised against purified dystrophin-glycoprotein complex of rabbit origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

$\alpha$ -dystroglycan (VIA4<sub>1</sub>) is recommended for detection of  $\alpha$ -dystroglycan of mouse, rat, human, bovine, rabbit and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for  $\alpha/\beta$ -dystroglycan siRNA (h): sc-43488,  $\alpha/\beta$ -dystroglycan siRNA (m): sc-43489,  $\alpha/\beta$ -dystroglycan shRNA Plasmid (h): sc-43488-SH,  $\alpha/\beta$ -dystroglycan shRNA Plasmid (m): sc-43489-SH,  $\alpha/\beta$ -dystroglycan shRNA (h) Lentiviral Particles: sc-43488-V and  $\alpha/\beta$ -dystroglycan shRNA (m) Lentiviral Particles: sc-43489-V.

Molecular Weight of  $\alpha$ -dystroglycan skeletal muscle: 156 kDa.

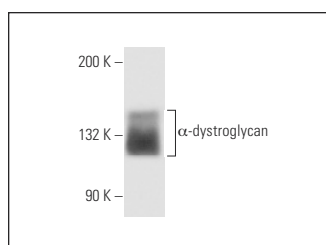
Molecular Weight of  $\alpha$ -dystroglycan brain: 120 kDa.

Positive Controls: JAR cell lysate: sc-2276, human skeletal muscle extract: sc-363776 or mouse brain extract: sc-2253.

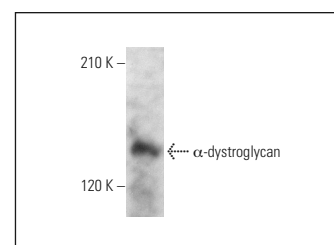
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



$\alpha$ -dystroglycan (VIA4<sub>1</sub>): sc-53986. Western blot analysis of  $\alpha$ -dystroglycan expression in bovine brain tissue extract.



$\alpha$ -dystroglycan (VIA4<sub>1</sub>): sc-53986. Western blot analysis of  $\alpha$ -dystroglycan expression in JAR whole cell lysate.

## SELECT PRODUCT CITATIONS

- Munoz, J., et al. 2010. LG4-5 domains of laminin-211 binds  $\alpha$ -dystroglycan to allow myotube attachment and prevent anoikis. *J. Cell. Physiol.* 222: 111-119.
- Shen, J.G., et al. 2012. Dystroglycan is associated with tumor progression and patient survival in gastric cancer. *Pathol. Oncol. Res.* 18: 79-84.
- Zhang, H.Z., et al. 2014. Correlation of deregulated like-acetylglucosaminyl transferase and aberrant  $\alpha$ -dystroglycan expression with human tongue cancer metastasis. *J. Oral Maxillofac. Surg.* 72: 1106-1118.
- Amiya, E., et al. 2016. Fukutin gene mutations that cause left ventricular noncompaction. *Int. J. Cardiol.* 222: 727-729.
- Njah, K., et al. 2019. A role of Agrin in maintaining the stability of vascular endothelial growth factor receptor-2 during tumor angiogenesis. *Cell Rep.* 28: 949-965.
- Xu, C., et al. 2020. N-glycosylated SGK196 suppresses the metastasis of basal-like breast cancer cells. *Oncogenesis* 9: 4.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.



See  **$\alpha$ -dystroglycan (IIH6): sc-53987** for  $\alpha$ -dystroglycan antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.