SANTA CRUZ BIOTECHNOLOGY, INC.

β-dystroglycan (V-15): sc-22950

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. α-dystroglycan is a membrane-associated, extracellular glycoprotein that is anchored to the cell-membrane by binding to the transmembrane glycoprotein β-dystroglycan to form an α/β-dystroglycan-complex. Additionally, dystroglycan is part of a multimolecular 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

1. Cote, P.D., Moukhles, H., Lindenbaum, M. and Carbonetto, S. 1999. Chimaeric mice deficient in dystroglycans develop muscular dystrophy and have disrupted myoneural synapses. Nat. Genet. 23: 338-342.
2. Seifert, J., Ogawa, T., Kurono, S. and Ito, Y. 2000. Syntheses of α-dystroglycan derived glycosyl amino acids carrying a novel mannosyl Serine/Threonine linkage. Glycoconj. J. 17: 407-423.
3. Masaki, T., Matsumura, K., Hirata, A., Yamada, H., Hase, A., Shimizu, T., Yorifuji, H., Motoyoshi, K. and Kamakura, K. 2001. Expression of dystroglycan complex in satellite cells of dorsal root ganglia. Acta Neuropathol. 101: 174-178.
4. Marchand, S., Stetzkowski-Marden, F. and Cartaud, J. 2001. Differential targeting of components of the dystrophin complex to the postsynaptic membrane. Eur. J. Neurosci. 13: 221-229.
5. Henry, M.D., Satz, J.S., Brakebusch, C., Costell, M., Gustafsson, E., Fassler, R. and Campbell, K.P. 2001. Distinct roles for dystroglycan, β1 integrin and Perlecan in cell surface laminin organization. J. Cell Sci. 114: 1137-1144.

CHROMOSOMAL LOCATION

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

SOURCE

β-dystroglycan (V-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of β-dystroglycan of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515648 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

β-dystroglycan (V-15) is recommended for detection of β-dystroglycan of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

β-dystroglycan (V-15) is also recommended for detection of β-dystroglycan in additional species, including porcine.

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

Molecular Weight of β-dystroglycan precursor: 97 kDa.

Molecular Weight of mature β-dystroglycan: 43 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, L6 whole cell lysate: sc-364196 or DU 145 cell lysate: sc-2268.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Heng, S., Paule, S.G., Li, Y., Rombauts, L.J., Vollenhoven, B., Salamonsen, L.A. and Nie, G. 2015. Posttranslational removal of α-dystroglycan N terminus by PC5/6 cleavage is important for uterine preparation for embryo implantation in women. FASEB J. 29: 4011-4022.

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.