

β-dystroglycan (B-4): sc-165997

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., et al. 1999. Chimaeric mice deficient in dystroglycans develop muscular dystrophy and have disrupted myoneural synapses. *Nat. Genet.* 23: 338-342.
2. Seifert, J., et al. 2000. Syntheses of α-dystroglycan derived glycosyl amino acids carrying a novel mannosyl serine/threonine linkage. *Glycoconj. J.* 17: 407-423.
3. Masaki, T., et al. 2001. Expression of dystroglycan complex in satellite cells of dorsal root ganglia. *Acta Neuropathol.* 101: 174-178.
4. Marchand, S., et al. 2001. Differential targeting of components of the dystrophin complex to the postsynaptic membrane. *Eur. J. Neurosci.* 13: 221-229.
5. Henry, M.D., et al. 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 (B-4) is a mouse monoclonal antibody raised against amino acids 831-895 mapping at the C-terminus of dystroglycan precursor of human origin.

PRODUCT

Each vial contains 200 μg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

β-dystroglycan (B-4) is recommended for detection of β-dystroglycan of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], 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).

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.

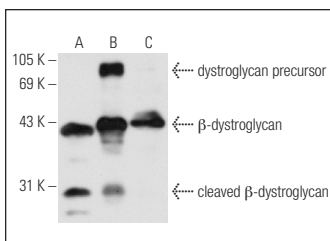
Molecular Weight of mature β-dystroglycan: 43 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, rat skeletal muscle extract: sc-364810 or C6 whole cell lysate: sc-364373.

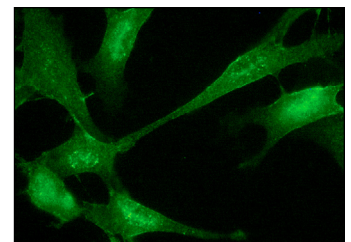
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



β-dystroglycan (B-4): sc-165997. Western blot analysis of β-dystroglycan expression in MCF7 (A) and C6 (B) whole cell lysates and rat skeletal muscle tissue extract (C).



β-dystroglycan (B-4): sc-165997. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing membrane localization.

RESEARCH USE

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

CONJUGATES

See **β-dystroglycan (4F7): sc-33702** for β-dystroglycan antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.