SANTA CRUZ BIOTECHNOLOGY, INC.

Desmin (B-7): sc-271677

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cytoskeletal intermediate filaments (IFs) constitute a diverse group of proteins that are expressed in a highly tissue-specific manner. IFs are constructed from two-chain α-helical coiled-coil molecules arranged on an imperfect helical lattice, and have been widely used as markers for distinguishing individual cell types within a tissue and identifying the origins of metastatic tumors. Vimentin is an IF general marker of cells originating in the mesenchyme. Vimentin and Desmin, a related class III IF, are both expressed during skeletal muscle development. Desmin, a 469 amino acid protein found near the Z line in sarcomeres, is expressed more frequently in adult differentiated state tissues. Desmin makes up attachments between the terminal Z-disc and membrane-associated proteins to form a force-transmitting system. Mutations in the gene encoding for Desmin are associated with adult-onset skeletal myopathy, sporadic disease and mild cardiac involvement.

CHROMOSOMAL LOCATION

Genetic locus: DES (human) mapping to 2q35; Des (mouse) mapping to 1 C4.

SOURCE

Desmin (B-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 413-445 near the C-terminus of Desmin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271677 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Desmin (B-7) is recommended for detection of Desmin 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Desmin (B-7) is also recommended for detection of Desmin in additional species, including canine.

Suitable for use as control antibody for Desmin siRNA (h): sc-29294, Desmin siRNA (m): sc-29295, Desmin shRNA Plasmid (h): sc-29294-SH, Desmin shRNA Plasmid (m): sc-29295-SH, Desmin shRNA (h) Lentiviral Particles: sc-29294-V and Desmin shRNA (m) Lentiviral Particles: sc-29295-V.

Molecular Weight of Desmin: 53 kDa.

Positive Controls: RD whole cell lysate: sc-364791, C2C12 whole cell lysate: sc-364188 or Sol8 cell lysate: sc-2249.

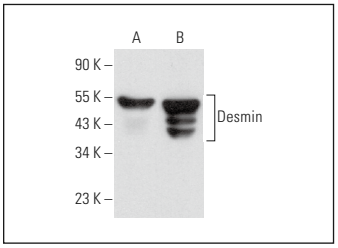
RESEARCH USE

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

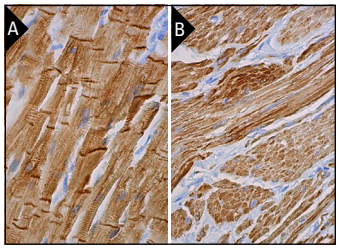
STORAGE

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

DATA



Desmin (B-7): sc-271677. Western blot analysis of Desmin expression in RD (**A**) and C2C12 (**B**) whole cell lysates.



Desmin (B-7): sc-271677. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing intercalated disc and cytoplasmic staining of myocytes (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells (**B**).

SELECT PRODUCT CITATIONS

1. Lipskaia, L., et al. 2014. Expression of sarco (endo) plasmic reticulum calcium ATPase (SERCA) system in normal mouse cardiovascular tissues, heart failure and atherosclerosis. Biochim. Biophys. Acta 1843: 2705-2718.
2. Li, H.P., et al. 2015. Effect of lipopolysaccharide on Angiotensin II type 1 receptor expression and function in human pulmonary microvascular endothelial cells. Mol. Med. Rep. 12: 8289-8293.
3. Traister, A., et al. 2018. Cardiac regenerative capacity is age- and disease-dependent in childhood heart disease. PLoS ONE 13: e0200342.
4. Fang, S., et al. 2019. The role of pulmonary mesenchymal cells in airway epithelium regeneration during injury repair. Stem Cell Res. Ther. 10: 366.
5. Jannas-Vela, S., et al. 2020. Effect of a 12-week endurance training program on force transfer and membrane integrity proteins in lean, obese, and type 2 diabetic subjects. Physiol. Rep. 8: e14429.
6. Langer, H.T., et al. 2020. Generation of desminopathy in rats using CRISPR-Cas9. J. Cachexia Sarcopenia Muscle 11: 1364-1376.
7. Uberti, F., et al. 2020. Study of magnesium formulations on intestinal cells to influence myometrium cell relaxation. Nutrients 12: 573.
8. Langer, H.T., et al. 2021. A mutation in Desmin makes skeletal muscle less vulnerable to acute muscle damage after eccentric loading in rats. FASEB J. 35: e21860.
9. Langer, H.T., et al. 2021. Cannabidiol does not impair anabolic signaling following eccentric contractions in rats. Int. J. Sport Nutr. Exerc. Metab. 31: 93-100.

CONJUGATES

See **Desmin (RD301): sc-23879** for Desmin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.