

Sarcospan (E-2): sc-393187

BACKGROUND

The dystrophin-glycoprotein complex (DGC) is a multisubunit protein complex that spans the sarcolemma and forms a link between the subsarcolemmal cytoskeleton and the extracellular matrix. Defects in components of the DGC cause muscular dystrophy, indicating that the DGC plays important roles in muscular function and viability. Sarcospan (also designated K-Ras oncogene-associated protein and Kirstein-Ras-associated protein), a member of this complex, contains four transmembrane spanning helices with intracellular N- and C-terminal domains. The expression of Sarcospan is reduced in muscle from patients with Duchenne muscular dystrophy. Sarcospan mRNAs are expressed in a range of cell lines, tumors, and normal tissue, with very high expression levels in muscle. Two isoforms of Sarcospan, SPN1 and SPN2, are produced by alternative splicing. SPN1 is expressed in heart and skeletal muscle, whereas SPN2 is expressed in heart, skeletal muscle, thymus, prostate, testis, ovary, small intestine, colon and spleen. The sarcoglycan complex in striated muscle is a heterotetrameric unit integrally associated with Sarcospan in the dystrophin-glycoprotein complex and it is also linked to the signaling protein, neural nitric oxide synthase, through α -Syntrophin that associated with dystrobrevin.

CHROMOSOMAL LOCATION

Genetic locus: SSPN (human) mapping to 12p12.1; Sspn (mouse) mapping to 6 G3.

SOURCE

Sarcospan (E-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 162-199 within an internal region of Sarcospan of human origin.

PRODUCT

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

Sarcospan (E-2) is available conjugated to agarose (sc-393187 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393187 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393187 PE), fluorescein (sc-393187 FITC), Alexa Fluor[®] 488 (sc-393187 AF488), Alexa Fluor[®] 546 (sc-393187 AF546), Alexa Fluor[®] 594 (sc-393187 AF594) or Alexa Fluor[®] 647 (sc-393187 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-393187 AF680) or Alexa Fluor[®] 790 (sc-393187 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393187 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

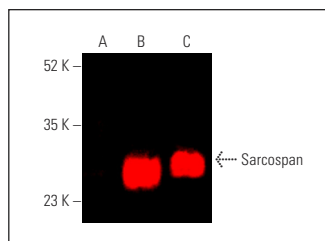
Sarcospan (E-2) is recommended for detection of Sarcospan of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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).

Suitable for use as control antibody for Sarcospan siRNA (h): sc-43426, Sarcospan siRNA (m): sc-43427, Sarcospan shRNA Plasmid (h): sc-43426-SH, Sarcospan shRNA Plasmid (m): sc-43427-SH, Sarcospan shRNA (h) Lentiviral Particles: sc-43426-V and Sarcospan shRNA (m) Lentiviral Particles: sc-43427-V.

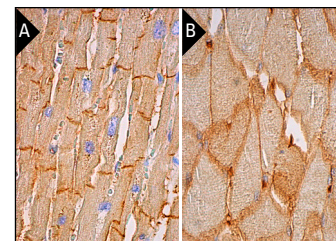
Molecular Weight of Sarcospan: 25 kDa.

Positive Controls: Sarcospan (m): 293T Lysate: sc-123354 or rat heart extract: sc-2393.

DATA



Sarcospan (E-2): sc-393187. Near-Infrared western blot analysis of Sarcospan expression in non-transfected 293T: sc-117752 (A) and mouse Sarcospan transfected 293T: sc-123354 (B) whole cell lysates and rat heart tissue extract (C). Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgG₁ BP-CFL 790: sc-533666.



Sarcospan (E-2): sc-393187. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing intercalated discs and cytoplasmic staining of myocytes (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing membrane and cytoplasmic staining of myocytes (B).

SELECT PRODUCT CITATIONS

1. Vanhoutte, D., et al. 2016. Thrombospondin expression in myofibers stabilizes muscle membranes. *Elife* 5: e17589.
2. Shu, C., et al. 2020. High-throughput screening identifies modulators of Sarcospan that stabilize muscle cells and exhibit activity in the mouse model of Duchenne muscular dystrophy. *Skelet. Muscle* 10: 26.
3. Mello, M.G., et al. 2021. Assessing the reproducibility of labelled antibody binding in quantitative multiplexed immuno-mass spectrometry imaging. *Anal. Bioanal. Chem.* 413: 5509-5516.
4. Capitanio, D., et al. 2022. Molecular fingerprint of BMD patients lacking a portion in the rod domain of dystrophin. *Int. J. Mol. Sci.* 23: 2624.

RESEARCH USE

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