

# $\alpha$ -sarcoglycan (F-7): sc-390647

## BACKGROUND

The sarcoglycan transmembrane proteins are members of the dystrophin complex. Sarcoglycans cluster together to form a complex, which is localized in the cell membrane of skeletal, cardiac, and smooth muscle fibers. Four sarcoglycan subunit proteins, designated  $\alpha$ -,  $\beta$ -,  $\gamma$ - and  $\delta$ -sarcoglycan, form a complex on the skeletal muscle cell surface membrane. A genetic defect in any one of these proteins causes the loss or marked decrease of the whole sarcoglycan complex, which is observed in the autosomal recessive muscular dystrophy, sarcoglycanopathy. In smooth muscle,  $\beta$ - and  $\delta$ -sarcoglycans are associated with  $\epsilon$ -sarcoglycan, a glycoprotein homologous to  $\alpha$ -sarcoglycan. Additionally, a complete deficiency in  $\delta$ -sarcoglycan is the cause of the Syrian hamster BIO.14 cardiomyopathy.

## REFERENCES

- Barresi, R., et al. 2000. Expression of  $\gamma$ -sarcoglycan in smooth muscle and its interaction with the smooth muscle sarcoglycan-sarcospan complex. *J. Biol. Chem.* 275: 38554-38560.
- Hack, A.A., et al. 2000. Differential requirement for individual sarcoglycans and dystrophin in the assembly and function of the dystrophin-glycoprotein complex. *J. Cell Sci.* 113: 2535-2544.
- Ueda, H., et al. 2001.  $\delta$ - and  $\gamma$ -sarcoglycan localization in the sarcoplasmic reticulum of skeletal muscle. *J. Histochem. Cytochem.* 49: 529-538.
- Wakabayashi-Takai, E., et al. 2001. Identification of myogenesis-dependent transcriptional enhancers in promoter region of mouse  $\gamma$ -sarcoglycan gene. *Eur. J. Biochem.* 268: 948-957.

## CHROMOSOMAL LOCATION

Genetic locus: SGCA (human) mapping to 17q21.33; Sgca (mouse) mapping to 11 D.

## SOURCE

$\alpha$ -sarcoglycan (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 43-68 near the N-terminus of  $\alpha$ -sarcoglycan of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$\alpha$ -sarcoglycan (F-7) is available conjugated to agarose (sc-390647 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390647 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390647 PE), fluorescein (sc-390647 FITC), Alexa Fluor<sup>®</sup> 488 (sc-390647 AF488), Alexa Fluor<sup>®</sup> 546 (sc-390647 AF546), Alexa Fluor<sup>®</sup> 594 (sc-390647 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-390647 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-390647 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-390647 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390647 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

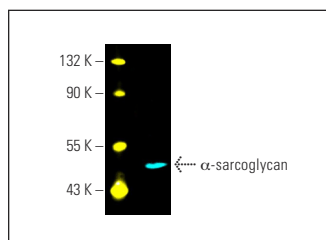
$\alpha$ -sarcoglycan (F-7) is recommended for detection of  $\alpha$ -sarcoglycan of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (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  $\alpha$ -sarcoglycan siRNA (h): sc-43416,  $\alpha$ -sarcoglycan siRNA (m): sc-43417,  $\alpha$ -sarcoglycan shRNA Plasmid (h): sc-43416-SH,  $\alpha$ -sarcoglycan shRNA Plasmid (m): sc-43417-SH,  $\alpha$ -sarcoglycan shRNA (h) Lentiviral Particles: sc-43416-V and  $\alpha$ -sarcoglycan shRNA (m) Lentiviral Particles: sc-43417-V.

Molecular Weight of  $\alpha$ -sarcoglycan: 50 kDa.

Positive Controls: human skeletal muscle extract: sc-363776.

## DATA



$\alpha$ -sarcoglycan (F-7) Alexa Fluor<sup>®</sup> 647: sc-390647 AF647. Direct fluorescent western blot analysis of  $\alpha$ -sarcoglycan expression in human skeletal muscle tissue extract. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Cruz Marker<sup>™</sup> Molecular Weight Standards detected with Cruz Marker<sup>™</sup> MW Tag-Alexa Fluor<sup>®</sup> 488: sc-516790.

$\alpha$ -sarcoglycan (F-7): sc-390647. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing membrane and cytoplasmic staining of myocytes.

## SELECT PRODUCT CITATIONS

- Madison, R.D. and Robinson, G.A. 2019. Muscle-derived extracellular vesicles influence motor neuron regeneration accuracy. *Neuroscience* 419: 46-59.
- Chawewannakorn, C., et al. 2019. Exercise-evoked intramuscular neutrophil-endothelial interactions support muscle performance and GLUT4 translocation: a mouse gnawing model study. *J. Physiol.* 598: 101-122.
- Rigamonti, A.E., et al. 2020. Effects of an acute bout of exercise on circulating extracellular vesicles: tissue-, sex-, and BMI-related differences. *Int. J. Obes.* 44: 1108-1118.

## 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.

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