abcam

ab11425

Anti-Syntrophin antibody [1351]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.05% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Clone number	1351
Purification technique	Affinity purification Immunogen
Specificity	ab11425 is known to be reactive with the alpha 1, beta 1 and beta 2 subunits of syntrophin.
Epitope	ab11425 is directed against an epitope within the PDZ domain of syntrophin.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	5 µg/mL
Notes	-

Expected

Species	Human, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Fish
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	0.5 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Fish
Dilution info	-
Notes	-

WB

Tested

Species	Rat
Dilution info	0.2 µg/mL
Notes	-

Expected

Species	Mouse, Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Fish
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	10 µg/mL
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Fish
Dilution info	-
Notes	-

Target data

See full target information SNTA1

Function	Adapter protein that binds to and probably organizes the subcellular localization of a variety of membrane proteins. May link various receptors to the actin cytoskeleton and the extracellular matrix via the dystrophin glycoprotein complex. Plays an important role in synapse formation and in the organization of UTRN and acetylcholine receptors at the neuromuscular synapse. Binds to phosphatidylinositol 4,5-bisphosphate (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

ab11425 is seen as the "gold standard" for syntrophin assessment.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Syntrophin also known by its alternative names such as dystrophin-associated protein comes in several isoforms and weighs approximately 58 kDa. It is a modular protein that connects multiple protein complexes in cellular membranes. Syntrophin features multiple domains including PDZ PH and SU which enable it to bind various partners. This protein finds expression in many tissues including skeletal muscle heart and brain indicating its widespread role in cellular interactions.
Biological function summary	Syntrophin acts as a scaffolding protein in the dystrophin-glycoprotein complex (DGC). It plays an important role in linking the DGC to signaling proteins and

	stabilizes the sarcolemma during muscle contraction. Syntrophin binds ion channels kinases and other signaling molecules facilitating signal transduction and maintaining cellular stability. Its interactions support the integrity of muscle cells by organizing proteins important for communication and structural support.
Pathways	Syntrophin relates to the MAPK and PI3K/Akt signaling pathways. These pathways influence cell growth survival and metabolism. Syntrophin interacts with various kinases involved in these pathways including serine/threonine-protein kinase Akt1 and mitogen-activated protein kinases (MAPKs). By participating in these pathways syntrophin helps orchestrate cellular responses to extracellular stimuli reflecting its importance in maintaining proper cellular function.
Associated diseases and disorders	Problems with syntrophin often associate with muscular dystrophies and cardiac disorders like Duchenne muscular dystrophy (DMD) and heart failure. In DMD the absence or malfunction of dystrophin affects the dystrophin-glycoprotein complex leading to disruption in syntrophin functions. This disruption can also link to cardiac disorders where syntrophin's interaction with dystrophin affects heart muscle stability and function. Understanding syntrophin's roles can contribute to strategies for managing these conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

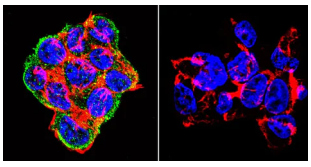
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

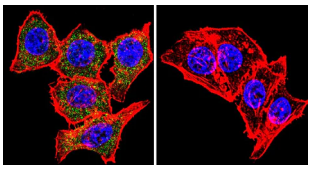
7 product images



Immunocytochemistry/ Immunofluorescence - Anti-Syntrophin antibody [1351] (ab11425)

Syntrophin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Syntrophin antibody

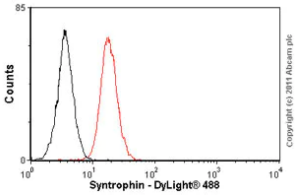
Immunocytochemistry/Immunofluorescence analysis of 293 cells labeling Syntrophin (green) with ab11425 at 1/20. F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue). Cells were fixed with formaldehyde and incubated with the primary antibody overnight at 4°C. A DyLight 488-conjugated secondary antibody was used. 60X magnification. Right - negative control.



Immunocytochemistry/ Immunofluorescence - Anti-Syntrophin antibody [1351] (ab11425)

Syntrophin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Syntrophin antibody

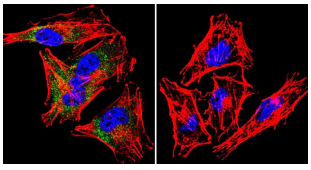
Immunocytochemistry/Immunofluorescence analysis of HeLa cells labeling Syntrophin (green) with ab11425 at 1/20. F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue). Cells were fixed with formaldehyde and incubated with the primary antibody overnight at 4°C. A DyLight 488-conjugated secondary antibody was used. 60X magnification. Right - negative control.



Flow Cytometry - Anti-Syntrophin antibody [1351] (ab11425)

Syntrophin Flow Cytometry staining using mouse Anti-Syntrophin antibody

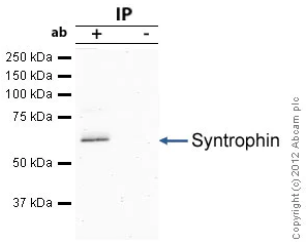
Overlay histogram showing SH-SY5Y cells stained with ab11425 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab11425, 0.5µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in SH-SY5Y cells fixed with 80% methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-Syntrophin antibody [1351] (ab11425)

Syntrophin Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Syntrophin antibody

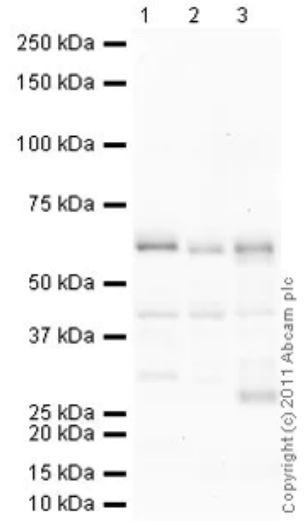
Immunocytochemistry/Immunofluorescence analysis of A2058 cells labeling Syntrophin (green) with ab11425 at 1/20. F-Actin staining with Phalloidin (red) and nuclei with DAPI (blue). Cells were fixed with formaldehyde and incubated with the primary antibody overnight at 4°C. A DyLight 488-conjugated secondary antibody was used. 60X magnification. Right - negative control.



Immunoprecipitation - Anti-Syntrophin antibody [1351] (ab11425)

Syntrophin was immunoprecipitated using 0.5mg Mouse Skeletal Muscle tissue lysate, 5µg of Mouse monoclonal to Syntrophin and 50µl of protein G magnetic beads (+). No antibody was added to the control (-).
The antibody was incubated under agitation with Protein G beads for 10min, Mouse Skeletal Muscle tissue lysate lysate diluted in RIPA buffer was added to each sample and incubated for a further 10min under agitation.
Proteins were eluted by addition of 40µl SDS loading buffer and incubated for 10min at 70^{o}C; 10µl of each sample was separated on a SDS PAGE gel, transferred to a nitrocellulose membrane, blocked with 5% BSA and probed with ab11425.
Secondary: Goat polyclonal to mouse IgG light chain specific (HRP) at 1/5000 dilution.
Band: 58kDa; Syntrophin
All lanes:
Immunoprecipitation - Anti-Syntrophin antibody [1351] (ab11425)

Predicted band size: 54 kDa



Western blot - Anti-Syntrophin antibody [1351] (ab11425)

All lanes:
Western blot - Anti-Syntrophin antibody [1351] (ab11425) at 5 µg/mL

Lane 1:
Human skeletal muscle tissue lysate - total protein (ab29330) at 20 µg

Lane 2:
Skeletal Muscle (Rat) Tissue Lysate at 20 µg

Lane 3:
Skeletal Muscle (Mouse) Tissue Lysate at 20 µg

Secondary

All lanes:
Goat polyclonal Secondary Antibody to Mouse IgG - H&L (HRP), pre-adsorbed at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 54 kDa

Observed band size: 26 kDa, 42 kDa, 58 kDa

Exposure time: 12min

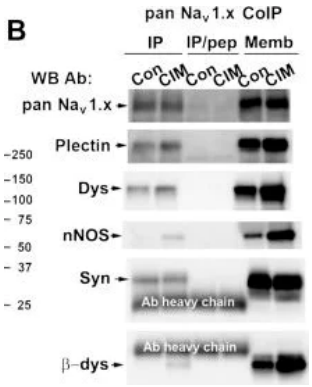


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-Syntrophin antibody [1351] (ab11425)

Syntrophin western blot using anti-Syntrophin antibody [1351] ab11425. Publication image and figure legend from Kraner, S. D., Novak, K. R., et al., 2012, Skelet Muscle, PubMed 22935229.

ab11425 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab11425 please see the product overview.

NaV1.4 co-precipitates with members of the dystrophin associated protein complex (DAPC). Using an antibody generated against a peptide corresponding to the highly conserved III-IV linker region (pan NaV 1.x), sodium channels from NP40-solubilized control and CIM skeletal muscle membranes were immunoprecipitated. The immunoprecipitated (IP) control (Con) or CIM materials were resolved on SDS-PAGE gels and probed in western blots with the indicated antibodies. As a negative control, the IP was performed in the presence of blocking peptide (IP/pep), the same sequence used as the antigen; and as a positive control, starting membranes were used (Memb). (A) A full-panel western with the NaV 1.4-specific monoclonal antibody LD3 is shown on the left in comparison to a protein gel stained with SYPRO Ruby protein stain on the right. The denatured antibody heavy chain (Ab HC) and light chain (Ab LC) are present in the immunoprecipitated samples, as best seen in the SYPRO stained gel. A large number of proteins co-precipitate with the sodium channel (NaV 1.x), and many of these are shown to be specific since they are absent in the peptide control. (B) Using antibodies against plectin, dystrophin (dys), neuronal nitric oxide synthase (nNOS), syntrophin (syn), and β-dystroglycan (β-dys) confirms that many components of the DAPC are present in the control and CIM IPs. (C) Quantification of the data from panel B. For each antibody in each CoIP, the signal for the control was set as 100% and the signal for the CIM was determined relative to this. The average of the signals for the CIM: control for each antibody is shown, and error bars are SEM (n =6). For some antibodies, notably the sodium channel antibodies, approximately equal signals were seen in control and CIM CoIPs. For other antibodies, notably dystrophin and syntrophin, there were slightly elevated amounts of these proteins present in the CIM. Finally, for the nNOS and β-dystroglycan, there was considerably more protein in the CIM CoIPs. These results are summarized in cartoon form in (D) which shows ‘tightly’ associated proteins in grey, and ‘loosely’ associated proteins in white. The protein associations shown in the cartoon are based on work carried out by a number of investigators, which previously demonstrated that NaV 1.x channels associate with proteins of the DAPC through their consensus S/TXV-COOH C-termini [26,27]. The dynamic regulation of the signaling protein nNOS in CIM suggests that it may play a role in the disease process, including affecting the inactivation gating of the adjacent sodium channels.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.