abcam

ab52636

Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.05% Sodium azide Constituents: 50% Tissue culture supernatant, 40% Glycerol (glycerin, glycerine), 9.85% Tris glycine, 0.1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP1098Y
Purification technique	Affinity purification Protein A
Concentration	0.135 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Not recommended

Species	Human
Dilution info	-

Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

ICC/IF

Tested

Species	Rat
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Rat
Dilution info	1/20 - 1/100
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information SYP

Function	Possibly involved in structural functions as organizing other membrane components or in targeting the vesicles to the plasma membrane. Involved in the regulation of short-term and long-term synaptic plasticity (By similarity).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	Synaptophysin also known as SYP is a glycoprotein approximately 38 kDa in size. It is expressed abundantly in the presynaptic vesicle membranes of neurons and in neuroendocrine cells. Synaptophysin serves as a marker for synaptic vesicles and neuroendocrine tumors. The protein plays a significant role in synaptic vesicle cycling processes engaging in the release and recycling of neurotransmitters.
Biological function summary	Synaptophysin contributes to synaptic transmission and is engaged in the formation and maintenance of the synaptic vesicle pools. It is a part of the complex involved in neuronal communication and might interact with other vesicular proteins to ensure efficient neurotransmitter exchange. Researchers often utilize anti-Synaptophysin antibodies such as Alexa Fluor 647 labeled ones for visualization under confocal microscopy.
Pathways	Synaptophysin operates within pathways involving neurotransmitter release and synaptic vesicle cycle. It connects to proteins like Synaptotagmin and SNAP-25 integral to the facilitation of synaptic transmission and exocytosis. These pathways ensure efficient signal conduction across neurons which is critical for normal nervous system functioning.
Associated diseases and disorders	Synaptophysin shows a strong association with neurodegenerative diseases and certain cancers like neuroblastoma. Altered expression levels or dysfunction of Synaptophysin can serve as a diagnostic marker for these conditions. The protein is connected with proteins like Bcl-2 in neurodegenerative diseases affecting cell survival and apoptosis pathways.

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.

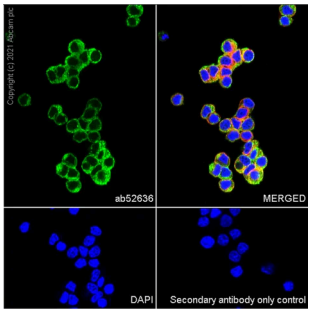
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

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7 product images



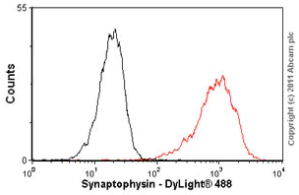
Immunocytochemistry/ Immunofluorescence - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636)

Synaptophysin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Synaptophysin antibody

Immunocytochemical analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized PC-12 (Rat adrenal gland pheochromocytoma) cells labeling Synaptophysin with ab52636 at 1/250 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green).
Confocal image showing cytoplasmic staining in PC-12 cell line.

The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) (red) at 1/200 dilution.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

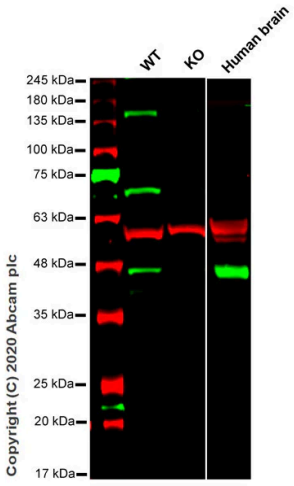


Flow Cytometry (Intracellular) - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636)

Synaptophysin Flow Cytometry (Intracellular) staining using rabbit Anti-Synaptophysin antibody

Overlay histogram showing PC12 cells stained with ab52636 (red line). The cells were fixed with methanol (5 min) and incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab52636, 1/100 dilution) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-rabbit IgG (H+L) (ab96899) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was

rabbit monoclonal IgG (0.5µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a slightly decreased signal in PC12 cells fixed with 4% paraformaldehyde (10 min) used under the same conditions.Please note that Abcam do not have data for use of this antibody on non-fixed cells. We welcome any customer feedback.



Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636)

Synaptophysin Western blot staining using rabbit Anti-Synaptophysin antibody

Lanes 1-3: Merged signal (red and green). Green - ab52636 observed at 38 kDa. Red - loading control, ab7291 observed at 50 kDa.
ab52636 Anti-Synaptophysin antibody [EP1098Y] was shown to specifically react with Synaptophysin in wild-type HEK293T cells. Loss of signal was observed when knockout cell line ab267272 (knockout cell lysate ab257060) was used. Wild-type and Synaptophysin knockout samples were subjected to SDS-PAGE. ab52636 and Anti-alpha Tubulin antibody [DM1A] - Loading Control (ab7291) were incubated overnight at 4°C at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti- Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti- Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1 in 10000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636) at 1/1000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

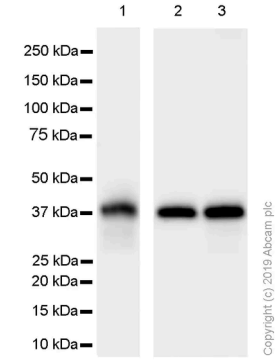
Lane 2:
SYP knockout HEK-293T cell lysate at 20 µg

Lane 3:
Human brain tissue lysate

Performed under reducing conditions.

Predicted band size: 33 kDa

Observed band size: 38 kDa



Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636)

Synaptophysin Western blot staining using rabbit Anti-Synaptophysin antibody

Blocking/Diluting buffer and concentration: 5% NFDM /TBST
All lanes:
Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636) at 0.203 µg/mL

Lane 1:
Human brain tissue lysate at 20 µg

Lane 2:
Mouse brain tissue lysate at 20 µg

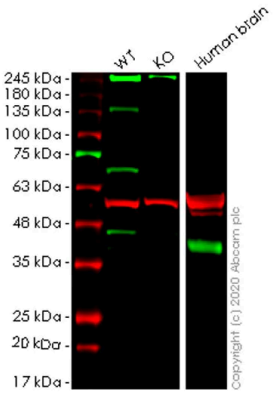
Lane 3:
Rat brain lysate tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 0.05 µg

Predicted band size: 33 kDa

Observed band size: 38 kDa



Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636)

Synaptophysin Western blot staining using rabbit Anti-Synaptophysin antibody

Lanes 1-3: Merged signal (red and green). Green - ab52636 observed at 38 kDa. Red - loading control, ab7291 observed at 50 kDa.
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All lanes:
Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636) at 1/1000 dilution

Lane 1:
Wild-type HEK293T cell lysate at 20 µg

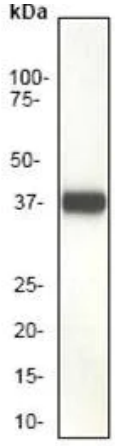
Lane 2:
Syp knockout HEK293T cell lysate at 20 µg

Lane 3:
Human brain tissue lysate at 20 µg

Performed under reducing conditions.

Predicted band size: 33 kDa

Observed band size: 38 kDa



Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636)

Synaptophysin Western blot staining of Rat brain membrane using rabbit Anti-Synaptophysin antibody

All lanes:
Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636) at 1/200000 dilution

All lanes:
Rat brain membrane

Secondary

All lanes:
Goat anti-rabbit HRP labeled at 1/2000 dilution

Predicted band size: 33 kDa

Observed band size: 38 kDa

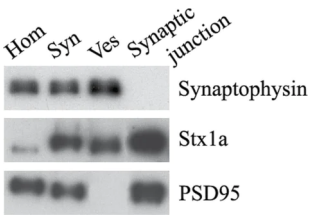


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Western blot - Anti-Synaptophysin antibody [EP1098Y] - Synaptic Marker (ab52636)

Synaptophysin Western blot staining using rabbit Anti-Synaptophysin antibody

Synaptophysin western blot using anti-Synaptophysin antibody [EP1098Y] ab52636. Publication image and figure legend from Zhou, J., Liu, Z., et al., 2015, Int J Neuropsychopharmacol, PubMed 26364272.

ab52636 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 ab52636 please see the product overview.

Western-blot analysis of the 4 fractions (Hom, Syn, Ves, and synaptic junction) obtained by biochemical fractionation. The fractions were analyzed using antibodies against synaptophysin (synaptic vesicle marker), Stx1a (synaptic active zone marker), and PSD95 (postsynaptic density marker).

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