abcam

ab196166

Alexa Fluor® 647 Anti-Synaptophysin antibody [YE269] - Synaptic Marker

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	YE269
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Rat
Dilution info	1/500
Notes	ab199093 - Rabbit monoclonal IgG (Alexa Fluor® 647), is suitable for use as an isotype control with this antibody.

Predicted

Species	Human, Mouse
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Rat
Dilution info	1/1000
Notes	-

Expected

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

IHC-P

Tested

Species	Rat
Dilution info	1/100
Notes	-

Expected

Species	Human, Mouse

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	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, Store in the dark

Notes

Synaptophysin is a protein that in humans is encoded by the SYP gene. Synaptophysin is a glycoprotein that is an integral part of the neuroendocrine secretory granule membrane and has been proposed as a reliable marker of axonal damage in the CNS in inflammatory and/or demyelinating conditions (i.e. multiple sclerosis).

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.

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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.

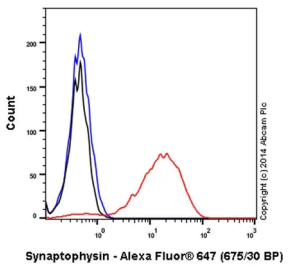
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

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3 product images

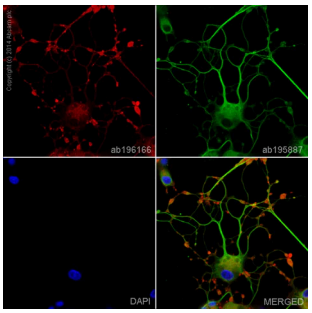


Flow Cytometry - Alexa Fluor® 647 Anti-Synaptophysin antibody [YE269] - Synaptic Marker (ab196166)

Synaptophysin Flow Cytometry staining using rabbit Anti-Synaptophysin antibody

Overlay histogram showing PC12 cells stained with ab196166 (red line). The cells were fixed with 4% formaldehyde (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 (ab196166, 1/500 dilution) for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) Alexa Fluor® 647 used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.
Acquisition of >5,000 events were collected using a solid-state 25mW red diode laser (635 nm) and 675/30 bandpass filter.

This antibody gave a positive signal in PC12 fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.

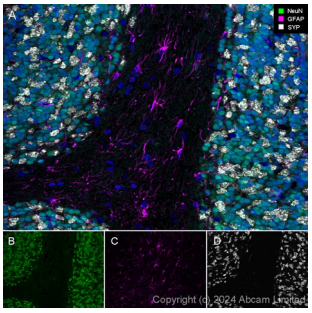


Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-Synaptophysin antibody [YE269] - Synaptic Marker (ab196166)

Synaptophysin Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Synaptophysin antibody

ab196166 staining Synaptophysin in NGF-differentiated PC-12 cells. The cells were fixed with 100% methanol (5 min), permeabilised in 0.1% Triton X-100 for 5 minutes and then blocked in 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab196166 at 1/100 dilution (shown in red) and ab195887, Mouse monoclonal [DM1A] to alpha Tubulin (Alexa Fluor® 488, shown in green) at 1/167 dilution overnight at +4°C. Nuclear DNA was labelled in blue with DAPI.
This product gave a positive signal in 5% formaldehyde (10 min) fixed NGF-differentiated PC-12 cells under the same testing conditions.

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-Synaptophysin antibody [YE269] - Synaptic Marker (ab196166)

Synaptophysin Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cerebellum using rabbit Anti-Synaptophysin antibody

Image A: composite multiplex immunohistochemistry staining using conjugates panel composed of anti-NeuN (Alexa Fluor® 488) (ab190195, 1/100 dilution, 5 µg/mL) (green), anti-GFAP (Alexa Fluor® 555) (ab201735, 1/100 dilution, 5 µg/mL) (magenta) and anti-Synaptophysin (Alexa Fluor® 647) (ab196166, 1/100 dilution, 5 µg/mL) (white) on Formalin/PFA-fixed paraffin-embedded sections of rat cerebellum. Nuclear DNA was labelled with DAPI (blue).

Image B: Formalin/PFA-fixed paraffin-embedded section of rat cerebellum stained with anti-NeuN (Alexa Fluor® 488) (ab190195, 1/100 dilution, 5 µg/mL).

Image C: Formalin/PFA-fixed paraffin-embedded section of rat cerebellum stained with anti-GFAP (Alexa Fluor® 555) (ab201735, 1/100 dilution, 5 µg/mL).

Image D: Formalin/PFA-fixed paraffin-embedded section of rat cerebellum stained with anti-Synaptophysin (Alexa Fluor® 647) (ab196166, 1/100 dilution, 5 µg/mL).

Immunohistochemistry staining was performed on a Leica Biosystems BOND® RX instrument. Heat mediated antigen retrieval with EDTA (pH 9.0, 110°C) for 40 mins. The section was then incubated at room temperature for 1 hour and mounted using Dako Fluorescence Mounting Medium®.

Image acquisition was performed with Leica SP8 confocal microscope. For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antigen retrieval conditions, antibody concentrations and incubation times.

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