abcam

ab189217

Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free

Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free (ab189217) is a rabbit recombinant monoclonal antibody provided in a PBS only buffer for easy conjugation. Suitable for **Western Blot, Flow Cytometry (Intra), ICC/IF** in **Human, Mouse, Rat**.

- BSA, sodium azide, and glycerol-free for easy conjugation
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EP1646Y
Purification technique	Affinity purification Protein A
Concentration	1.036 - 1.063 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

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

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	-
Notes	**For unpurified use at 1/50000.**

Species	Human
Dilution info	-
Notes	**For unpurified use at 1/50000.**

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.

Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Target data

See full target information SNCA

Function	Neuronal protein that plays several roles in synaptic activity such as regulation of synaptic vesicle trafficking and subsequent neurotransmitter release (PubMed:20798282, PubMed:26442590, PubMed:28288128, PubMed:30404828). Participates as a monomer in synaptic vesicle exocytosis by enhancing vesicle priming, fusion and dilation of exocytotic fusion pores (PubMed:28288128, PubMed:30404828). Mechanistically, acts by increasing local Ca(2+) release from microdomains which is essential for the enhancement of ATP-induced exocytosis (PubMed:30404828). Also acts as a molecular chaperone in its multimeric membrane-bound state, assisting in the folding of synaptic fusion components called SNAREs (Soluble NSF Attachment Protein REceptors) at presynaptic plasma membrane in conjunction with cysteine string protein-alpha/DNAJC5 (PubMed:20798282). This chaperone activity is important to sustain normal SNARE-complex assembly during aging (PubMed:20798282). Also plays a role in the regulation of the dopamine neurotransmission by associating with the dopamine transporter (DAT1) and thereby modulating its activity (PubMed:26442590).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

What is this antibody validated in?
Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free (ab189217) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of alpha + beta Synuclein?
Anti-alpha + beta Synuclein [EP1646Y] - BSA and Azide free (ab189217) specifically detects a band for alpha + beta Synuclein (UniProt: P37840) at a molecular weight of 14kDa.

Other related products
We have a range of other formats of antibody clone [EP1646Y] also available for your convenience: ab51252, Carrier free - ab189217

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	Alpha-synuclein and beta-synuclein are proteins implicated in the dynamics of neuronal function. Alpha-synuclein also known as SNCA is a synaptic protein weighing approximately 14 kDa expressed highly in the central nervous system. Unlike alpha-synuclein beta-synuclein shares a similar structure but differs in function and molecular weight. Both proteins belong to the synuclein family which also includes gamma-synuclein and are found primarily in pre-synaptic terminals contributing to synaptic vesicle physiology.
Biological function summary	Alpha- and beta-synuclein play roles in synaptic function and plasticity where they influence neurotransmitter release and vesicle recycling. These proteins do not generally form a stable complex with each other but their presence together suggests a regulatory interplay. Alpha-synuclein may promote vesicle formation and trafficking while beta-synuclein appears to counteract alpha's effects potentially protecting neurons from alpha-synuclein aggregation.
Pathways	Alpha- and beta-synuclein are key components in the synaptic vesicle cycle especially associated with the SNARE complex and neurotransmitter balance. Alpha-synuclein interacts with proteins like VAMP2 and STX1A in vesicle merging while beta-synuclein's regulatory role has implications in maintaining these interactions. In lipid metabolism alpha-synuclein influences fatty acid binding protein pathways impacting neuronal lipid transport and homeostasis.
Associated diseases and disorders	Alpha- and beta-synuclein hold significant relevance particularly in neurodegenerative disorders like Parkinson's disease and dementia with Lewy bodies which show marked alpha-synuclein aggregates known as Lewy bodies. Alpha-synuclein's accumulation in neurons correlates with disease progression. Beta-synuclein on the other hand appears to have a protective role potentially mitigating the toxicity of alpha's aggregates. The relation between these synucleins underlines their importance in therapeutic research for these disorders.

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

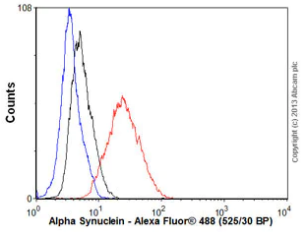
We do not recommend this combination. It is not covered by our product promise.

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.

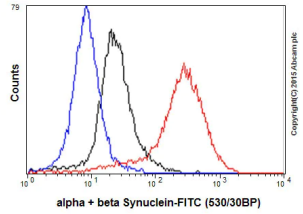
5 product images



Flow Cytometry (Intracellular) - Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free (ab189217)

Alpha + beta Synuclein Flow Cytometry (Intracellular) staining using rabbit Anti-alpha + beta Synuclein antibody

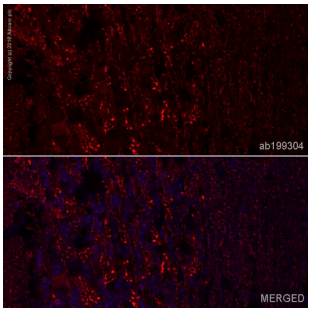
Overlay histogram showing SH-SY5Y cells stained with unpurified ab51252 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (unpurified ab51252, 1/1000 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluorr® 488 goat anti-rabbit IgG (H+L) (ab150077) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (0.1µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab51252).



Flow Cytometry (Intracellular) - Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free (ab189217)

Alpha + beta Synuclein Flow Cytometry (Intracellular) staining using rabbit Anti-alpha + beta Synuclein antibody

Overlay histogram showing U87-MG cells fixed in 4% PFA and stained with purified ab51252 at a dilution of 1 in 30 (red line). The secondary antibody used was FITC goat anti-rabbit at a dilution of 1 in 500. Rabbit monoclonal IgG was used as an isotype control (black line) and cells incubated in the absence of both primary and secondary antibody were used as a negative control (blue line). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab51252).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free (ab189217)

Alpha + beta Synuclein Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-alpha + beta Synuclein antibody

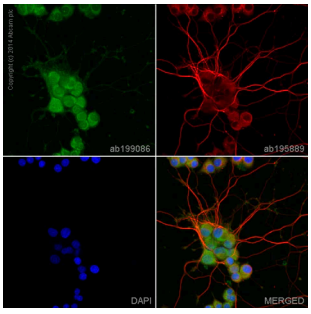
Clone EP1646Y (ab189217) has been successfully conjugated by Abcam. This image was generated using Anti-alpha + beta Synuclein antibody [EP1646Y] (Alexa Fluor® 647). Please refer to ab199304 for protocol details.

IHC image of alpha + beta Synuclein staining in a section of formalin-fixed paraffin-embedded normal human cerebellum.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6) in a Dako Pascal pressure cooker using the standard factory-set regime. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab199304 at 1/50 (shown in red). Nuclear DNA was labelled with DAPI (shown in blue). The section was then mounted using Fluoromount®.

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

For other IHC staining systems (automated and non-automated), customers should optimize variable parameters such as antigen retrieval conditions, antibody concentrations and incubation times.

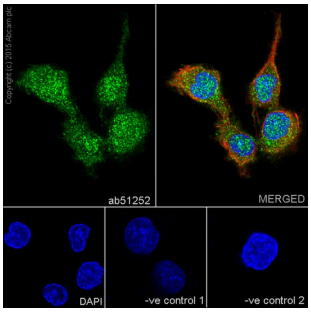


Immunocytochemistry/ Immunofluorescence - Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free (ab189217)

Alpha + beta Synuclein Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha + beta Synuclein antibody

Clone EP1646Y (ab189217) has been successfully conjugated by Abcam. This image was generated using Anti-alpha + beta Synuclein antibody [EP1646Y] (Alexa Fluor® 488). Please refer to ab199086 for protocol details.
ab199086 staining alpha+beta Synuclein in PC12 cells. The cells were fixed with 100% methanol (5min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab199086 at 1/50 dilution (shown in green) and ab195889, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at 2µg/ml (shown in red). Nuclear DNA was labelled with DAPI (shown in blue).

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



Immunocytochemistry/ Immunofluorescence - Anti-alpha + beta Synuclein antibody [EP1646Y] - BSA and Azide free (ab189217)

Alpha + beta Synuclein Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-alpha + beta Synuclein antibody

This ICC/IF data was generated using the same anti-alpha+beta synuclein antibody clone, EP1646Y, in a different buffer formulation (cat# ab51252). Immunocytochemistry/Immunofluorescence analysis of PC-12 cells labelling alpha + beta Synuclein with purified ab51252 at 1/100. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% Triton X-100. ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. DAPI (blue) was used as the nuclear counterstain. ab7291, a mouse anti-tubulin (1/1000) and ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000) were also used.

Control 1: primary antibody (1/100) and secondary antibody, ab150120, an Alexa Fluor® 594-conjugated goat anti-mouse IgG (1/1000).

Control 2: ab7291 (1/1000) and secondary antibody, ab150077, an Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000).

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