abcam

ab51252

Anti-alpha + beta Synuclein antibody [EP1646Y]

Recombinant | RabMAb | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EP1646Y
Purification technique	Affinity purification Protein A
Concentration	0.115 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/5000
Notes	**For unpurified use at 1/50000.**

Species	Human
Dilution info	1/5000
Notes	**For unpurified use at 1/50000.**

Expected

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

ICC/IF

Tested

Species	Rat
Dilution info	1/50 - 1/100
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/30

Notes	For unpurified use at 1/1000.ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	Mouse, Rat
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	Conditional Ambient
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

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	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.

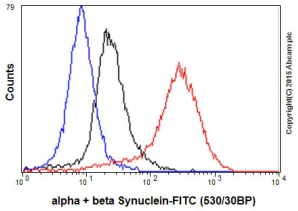
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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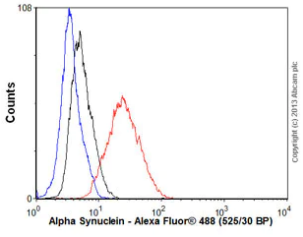
7 product images



Flow Cytometry (Intracellular) - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252)

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).

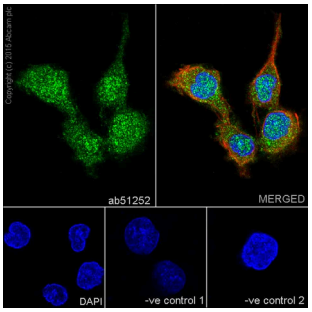


Flow Cytometry (Intracellular) - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252)

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

Overlay histogram showing SH-SY5Y cells stained with unpurifiedab51252 (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.

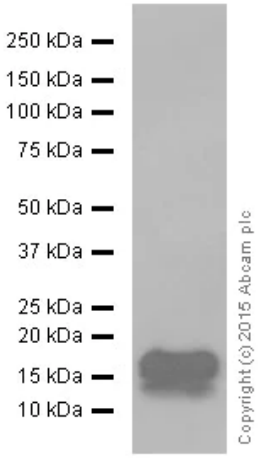


Immunocytochemistry/ Immunofluorescence - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252)

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

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).



Western blot - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252)

Blocking and dilution buffer: 5% NFDM /TBST.
All lanes:
Western blot - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252) at 1/5000 dilution

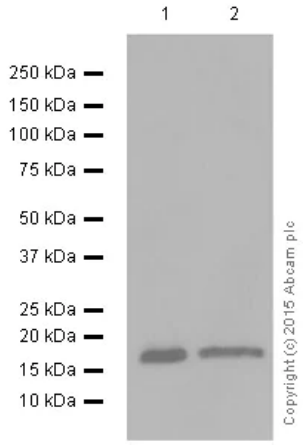
All lanes:
Human cerebellum tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 14 kDa

Observed band size: 18 kDa



Western blot - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252)

Blocking and dilution buffer: 5% NFDM /TBST.
All lanes:
Western blot - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252) at 1/5000 dilution

Lane 1:
Mouse brain tissue lysate at 20 µg

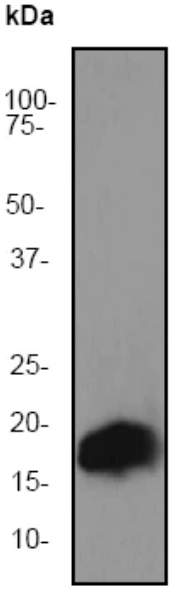
Lane 2:
Rat brain tissue lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 14 kDa

Observed band size: 18 kDa



Western blot - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252)

All lanes:
Western blot - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252) at 1/50000 dilution

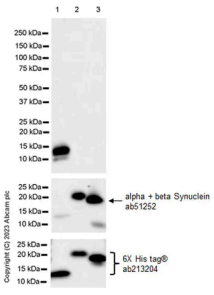
All lanes:
Human fetal brain tissue lysate at 10 µg

Secondary

All lanes:
HRP-conjugated goat anti-rabbit IgG at 1/2000 dilution

Predicted band size: 14 kDa

Observed band size: 18 kDa



Western blot - Anti-alpha + beta Synuclein antibody [EP1646Y] (ab51252)

Alpha + beta Synuclein Western blot staining using rabbit Anti-alpha + beta Synuclein antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

This antibody does not cross-react with human beta Synuclein and alpha Synuclein.

In Western blot, Anti-6X His tag® antibody [EPR20547] - ChIP Grade (ab213204) staining at 1/5000 dilution.

In Western blot, Anti-alpha + beta Synuclein antibody [EP1646Y] - (ab51252) staining at 1/1000 dilution.

All lanes:
Western blot - Anti-gamma Synuclein/SNCG antibody [EPR26218-79] (ab315442) at 1/1000 dilution

Lane 1:
His-tagged human gamma Synuclein recombinant protein at 10 ng

Lane 2:
His-tagged human beta Synuclein recombinant protein at 10 ng

Lane 3:
His-tagged human alpha Synuclein recombinant protein at 10 ng

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 14 kDa, 20 kDa, 19 kDa

Exposure time: 59s

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