abcam

ab27766

Anti-Alpha-synuclein antibody [LB 509]

Anti-Alpha-synuclein antibody [LB 509] (ab27766) is a mouse monoclonal antibody detecting Alpha-synuclein in **Western Blot, Flow Cytometry (Intra)**. Suitable for **Human, Rat,**.

- Over 80 publications
- Trusted since 2006

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	LB 509
Purification technique	Affinity purification
Epitope	ab27766 reacts with an epitope located in the region encoded by amino acids 115-122 of alpha-synuclein.
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Rat
Dilution info	1 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

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

Not recommended

Species	Purified native protein - Human
Dilution info	-
Notes	-

WB

Tested

Species	Purified native protein - Human
Dilution info	1/100 - 1/1000
Notes	-

Species	Human
Dilution info	1/100 - 1/1000
Notes	-

Expected

Species	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	Blue Ice
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

Anti-Alpha-synuclein antibody [LB 509] (ab27766) is a mouse monoclonal antibody and is validated for use in Flow Cyt (Intra), Western Blot in human, mouse, rat samples.

Anti-Alpha-synuclein antibody [LB 509] (ab27766) has been cited over 81 times in peer reviewed journals and is trusted by the scientific community.

Abcam's high quality validation processes ensure Anti-Alpha-synuclein antibody [LB 509] (Anti-SNCA antibody) (ab27766) has high sensitivity and specificity.

Anti-Alpha-synuclein antibody [LB 509] (ab27766) has 12 independent reviews from customers.

Anti-Alpha-synuclein antibody [LB 509] (ab27766) specifically detects Alpha-synuclein (UniProt ID: P37840; Molecular weight: 14kDa) and is sold in 100 µg selling sizes.

Synuclein Alpha (SNCA) is a protein primarily found in the brain, where it plays a crucial role in the regulation of synaptic vesicle trafficking and neurotransmitter release. It is a key component of Lewy bodies, which are pathological hallmarks of Parkinson's disease. Mutations and abnormal aggregation of SNCA are linked to several neurodegenerative disorders, including Parkinson's disease, dementia with Lewy bodies, and multiple system atrophy.

Alpha-synuclein is expressed predominantly in the brain, where it is concentrated in presynaptic nerve terminals. The deposition of the abundant presynaptic brain protein alpha-synuclein as fibrillary aggregates in neurons or glial cells is a hallmark lesion in a subset of neurodegenerative disorders. These disorders include Parkinson's disease (PD), dementia with Lewy bodies (DLB) and multiple system atrophy, collectively referred to as synucleinopathies. Parkinson's disease (PD) is a common neurodegenerative disorder characterized by the progressive accumulation in selected neurons of protein inclusions containing alpha-synuclein and ubiquitin.

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Supplementary info

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

Activity summary	Alpha-synuclein often referred to by alternate names such as SNCA is a protein of around 14 kDa mass. It mainly expresses in the brain particularly in presynaptic nerve terminals. This protein functions mechanically by stabilizing synaptic vesicles and maintaining synaptic function. It exists both in soluble monomer forms and as aggregates in protein filaments. Antibodies like 4D6 and EP1536Y target monomer forms of protein for more detailed studies.
Biological function summary	The alpha-synuclein protein plays critical roles in neuronal activity. It contributes to neurotransmitter release regulation by acting in the formation and plasticity of the presynaptic neuronal network. Alpha-synuclein doesn't usually form parts of large protein complexes but it may associate transiently with membranes and vesicular structures. The protein's monomer form has also been observed in alpha lines and related neuronal processes operating alongside various cellular functions.
Pathways	Synaptic vesicle trafficking and dopamine neurotransmitter release are significant areas involving the alpha-synuclein protein. In these pathways alpha-synuclein interacts with other proteins like synaptophysin and protein monomer monomerizations are intrinsic to these processes. Altered function or aggregation of alpha-synuclein disrupts these pathways influencing broader neurological functions.
Associated diseases and disorders	Alterations or accumulations of alpha-synuclein are strongly linked to Parkinson's disease and Lewy body dementia. In these conditions alpha-synuclein forms abnormal protein filaments known as Lewy bodies within neurons. These formations disrupt cellular processes and neuron health. Synucleinopathies such as these show connections with proteins like parkin and DJ-1 which also have key roles in these neurodegenerative diseases.

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.

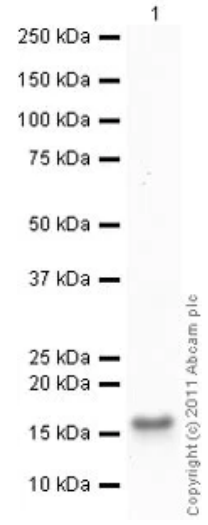
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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

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4 product images



Western blot - Anti-Alpha-synuclein antibody [LB 509] (ab27766)

Alpha-synuclein Western blot staining using mouse Anti-Alpha-synuclein antibody

All lanes:
Western blot - Anti-Alpha-synuclein antibody [LB 509] (ab27766) at 1/1000 dilution

All lanes:
Western blot - Recombinant Human Alpha-synuclein protein (Tag Free) (ab51189) at 0.1 µg

Secondary

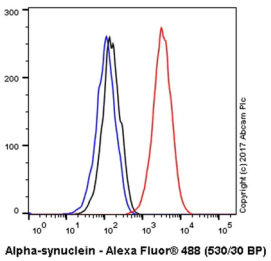
All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 1/5000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 14 kDa

Exposure time: 8min



Flow Cytometry (Intracellular) - Anti-Alpha-synuclein antibody [LB 509] (ab27766)

Alpha-synuclein Flow Cytometry (Intracellular) staining using mouse Anti-Alpha-synuclein antibody

Overlay histogram showing PC12 (NGF differentiated) cells stained with ab27766 (red line). The cells were fixed with 4% formaldehyde (10 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab27766, 1µg/1x10^6) for 30 min at 22°C. The secondary antibody used was Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed (ab150117) at 1/2000 dilution for 30 min at 22°C.
Isotype control antibody (black line) was Mouse IgG1 [15-6E10A7] (ab170190) 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 50mW Blue laser (488nm) and 530/30 bandpass filter.



Western blot - Anti-Alpha-synuclein antibody [LB 509] (ab27766)

Alpha-synuclein Western blot staining of Human brain hippocampus tissue lysate - total protein (ab30180) using mouse Anti-Alpha-synuclein antibody

All lanes:
Western blot - Anti-Alpha-synuclein antibody [LB 509] (ab27766) at 5 µg/mL

Lane 1:
Western blot - Recombinant Human Alpha-synuclein protein (Tag Free) (ab51189) at 10 µg

Lane 2:
Human brain hippocampus tissue lysate - total protein (ab30180) at 10 µg

Secondary

All lanes:
Goat polyclonal to Mouse IgG - H&L - Pre-Adsorbed (HRP) at 1/5000 dilution

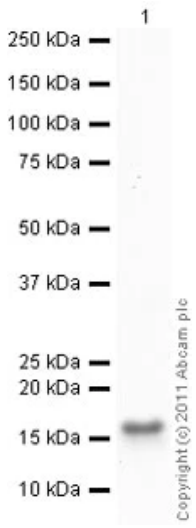
Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 14 kDa

Observed band size: 16 kDa, 32 kDa

Exposure time: 20min



Western blot - Anti-Alpha-synuclein antibody [LB 509] (ab27766)

Alpha-synuclein Western blot staining using mouse Anti-Alpha-synuclein antibody

All lanes:
Western blot - Anti-Alpha-synuclein antibody [LB 509] (ab27766) at 1/1000 dilution

All lanes:
Western blot - Recombinant Human Alpha-synuclein protein (Tag Free) (ab51189) at 0.1 µg

Secondary

All lanes:
Western blot - Goat Anti-Mouse IgG H&L (HRP) preadsorbed (ab97040) at 5000 µg

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 14 kDa

Exposure time: 8min

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