abcam

ab221908

Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free

Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908) is a rabbit recombinant monoclonal antibody provided in a PBS only buffer for easy conjugation. Suitable for **Western Blot, Flow Cytometry (Intra), IP, IHC-P, 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	EP1537Y
Purification technique	Affinity purification Protein A
Concentration	1.031 - 1.056 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

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

IP

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

WB

Tested

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Rat
Dilution info	-
Notes	-

Expected

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

Target data

See full target information SNCB

Function	Non-amyloid component of senile plaques found in Alzheimer disease. Could act as a regulator of SNCA aggregation process. Protects neurons from staurosporine and 6-hydroxy dopamine (6OHDA)-stimulated caspase activation in a p53/TP53-dependent manner. Contributes to restore the SNCA anti-apoptotic function abolished by 6OHDA. Not found in the Lewy bodies associated with Parkinson disease.

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-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of beta Synuclein?
Anti-beta Synuclein [EP1537Y] - BSA and Azide free (ab221908) specifically detects a band for beta Synuclein (UniProt: Q16143) at a molecular weight of 14kDa.

Other related products
We have a range of other formats of antibody clone [EP1537Y] also available for your convenience: ab76111, HRP - ab215783, Carrier free - ab221908

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	Beta-synuclein also known as B-synuclein or SNCB is a protein that plays a role in the nervous system. It is a small protein with a molecular weight around 14 kDa. Predominantly beta-synuclein is found in presynaptic terminals of neurons in the central nervous system including the brain and spinal cord. This protein shares

	significant amino acid sequence identity with alpha-synuclein and gamma-synuclein comprising the synuclein family. It acts as a modulator of neuronal and synaptic function influencing the dynamics of neurotransmitter release.
Biological function summary	Beta-synuclein contributes to cellular homeostasis and synaptic integrity. It is not typically found as part of a larger protein complex like its relative alpha-synuclein which forms toxic aggregates. Instead beta-synuclein exhibits neuroprotective properties helping maintain neuronal health. It possibly regulates synaptic vesicle cycling and mitigates levels of alpha-synuclein aggregation. Research suggests that loss of beta-synuclein function might disrupt synaptic stability leading to neurological issues.
Pathways	Beta-synuclein engages in synaptic function and plasticity. It participates in pathways related to neurotransmitter release and synaptic vesicle trafficking. Beta-synuclein is connected to calcium/calmodulin-dependent protein kinase II (CaMKII) pathways. This interaction supports beta-synuclein's regulatory impact on synaptic vesicle dynamics negatively modulating the aggregation-prone behaviors seen in alpha-synuclein during synucleinopathies.
Associated diseases and disorders	Beta-synuclein plays a role in neurodegenerative diseases like Parkinson’s disease and dementia with Lewy bodies. Research highlights its relationship with these conditions due to its interaction with alpha-synuclein known to form pathological aggregates and contribute to disease progression. Beta-synuclein's modulation of alpha-synuclein activity can impact the development and progression of these disorders. There is ongoing interest in its potential protective role suggesting it might be leveraged in therapeutic strategies against synucleinopathy-related 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

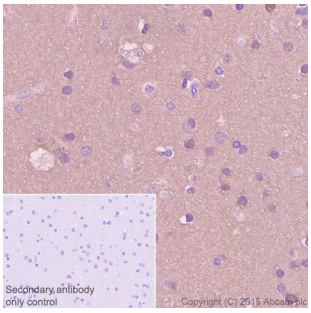
We do not recommend this combination. It is not covered by our product promise.

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.

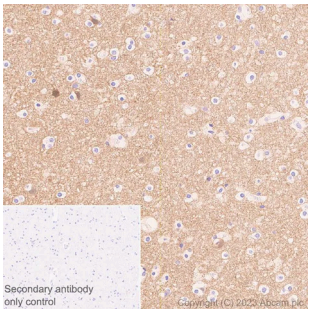
Full details and terms and conditions can be found here:
Terms & Conditions.

15 product images



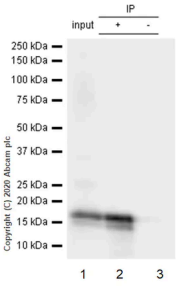
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human cerebrum tissue sections labeling beta Synuclein with purified ab76111 at 1/50 dilution (2.4 µg/mL). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain. This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

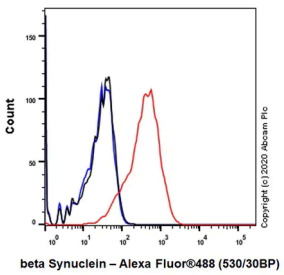
Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling beta Synuclein with ab221908 at 1/5000 dilution. followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Immunoprecipitation - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Purified ab76111 at 1/20 dilution (0.6 µg) immunoprecipitating beta Synuclein in Human brain lysate.
Lane 1 (input): Human brain lysate 10 µg
Lane 2 (+): ab76111 + Human brain lysate.
Lane 3 (-): Rabbit monoclonal IgG (ab172730) instead of ab76111 in Human brain lysate.
VeriBlot for IP Detection Reagent (HRP) (ab131366) (1/1000 dilution) was used for Western blotting.
Blocking Buffer and concentration: 5% NFDM/TBST.
Diluting buffer and concentration: 5% NFDM/TBST.
Observed band size: 18 kDa
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111).
All lanes:
Immunoprecipitation - Anti-beta Synuclein antibody [EP1537Y] (ab76111)

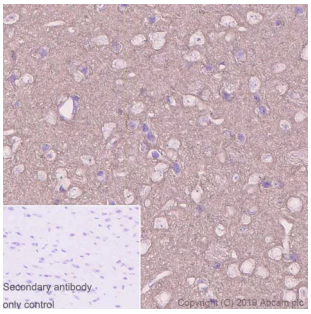
Predicted band size: 14 kDa



Flow Cytometry (Intracellular) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Beta Synuclein Flow Cytometry (Intracellular) staining using rabbit Anti-beta Synuclein antibody

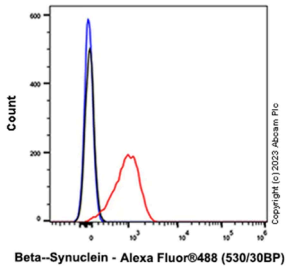
Intracellular Flow Cytometry analysis of PC-12 (Rat adrenal gland pheochromocytoma) cells labeling beta Synuclein with purified ab76111 at 1/100 dilution (10 µg/mL) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

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

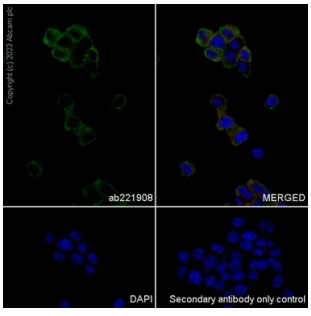
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse cerebrum tissue sections labeling beta Synuclein with purified ab76111 at 1/50 dilution (2.4 µg/mL). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111).



Flow Cytometry (Intracellular) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

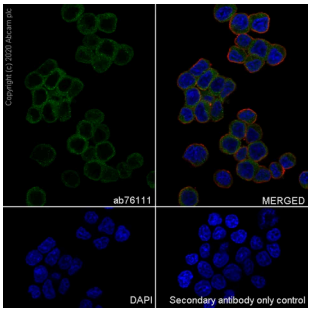
Beta Synuclein Flow Cytometry (Intracellular) staining using rabbit Anti-beta Synuclein antibody

PC-12 cells were fixed with 100µl 4% PFA for 10 min at RT, then permeabilized with 100µl 90% methanol for 30 min (-20° C) followed by blocking with 10% goat serum for 1h at room temperature. Incubate ab221908 for 30 min at room temperature (RT) and then incubate Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150081) for 30 min at room temperature.



Immunocytochemistry/ Immunofluorescence - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

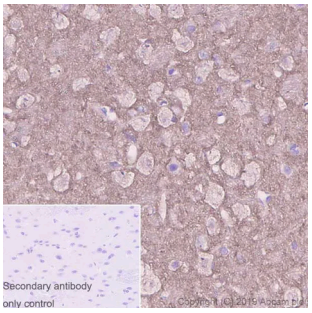
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized PC-12 cells labelling beta Synuclein with ab221908 at 1/100 dilution, followed by AlexaFluor® 488-conjugated Goat anti-Rabbit IgG H&L preadsorbed secondary antibody (ab150081) at 1/1000 dilution at RT for 45 min (Green). ab195889 Anti-alpha Tubulin, used as a counterstain at 1/200 dilution, was co-incubated with ab221908 overnight at 4° C. Nucleus were visualized using DAPI.



Immunocytochemistry/ Immunofluorescence - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Beta Synuclein Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-beta Synuclein antibody

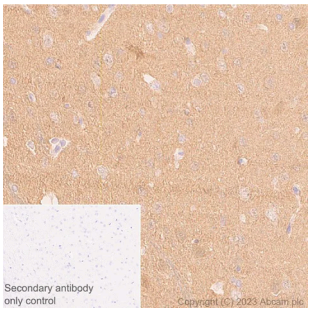
Immunocytochemistry/ Immunofluorescence analysis of PC-12 (Rat adrenal gland pheochromocytoma) cells labeling beta Synuclein with purified ab76111 at 1/50 dilution (2.4 µg/mL). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% TritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) 1/200 (2.5 µg/mL). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/mL) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

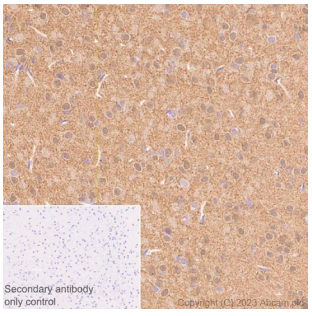
Beta Synuclein Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-beta Synuclein antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat cerebrum tissue sections labeling beta Synuclein with purified ab76111 at 1/50 dilution (2.4 µg/mL). Perform heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111)



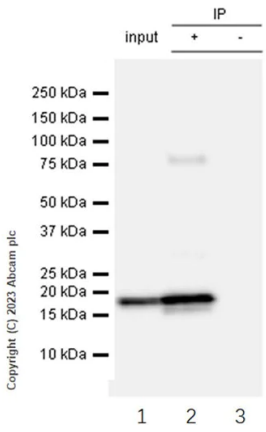
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Immunohistochemical analysis of paraffin-embedded Rat cerebrum tissue labeling beta Synuclein with ab221908 at 1/5000 dilution. followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Immunohistochemical analysis of paraffin-embedded Mouse cerebrum tissue labeling beta Synuclein with ab221908 at 1/5000 dilution. followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20 mins.



Immunoprecipitation - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

beta Synuclein was immunoprecipitated from 0.35 mg of mouse brain tissue lysate with ab221908 at 1/30 dilution. Western blot was performed from the immunoprecipitated using ab221908 at 1/1000 dilution.

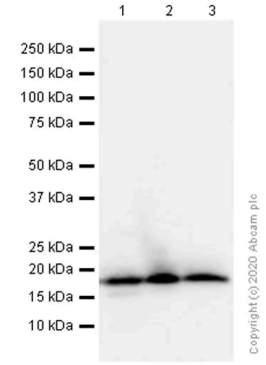
Lane 1:
Mouse brain tissue lysate (Input) at 10 µg

Lane 2:
Mouse brain tissue lysate (+)

Lane 3:
Rabbit monoclonal IgG (ab172730) instead of ab221908 in HepG2 whole cell lysate (-)

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution



Western blot - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Beta Synuclein Western blot staining using rabbit Anti-beta Synuclein antibody

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111).
All lanes:
Western blot - Anti-beta Synuclein antibody [EP1537Y] (ab76111) at 1/10000 dilution

Lane 1:
Human brain lysate at 20 µg

Lane 2:
Mouse brain lysate at 20 µg

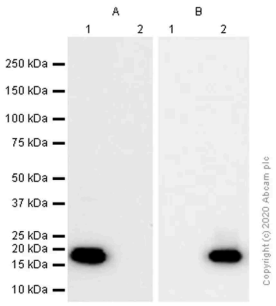
Lane 3:
Rat brain lysate at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 14 kDa

Observed band size: 18 kDa



Western blot - Anti-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

A: Anti-beta Synuclein antibody [EP1537Y] (ab76111)
B: Anti-Alpha-synuclein antibody [MJFR1] (ab138501)

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab76111).

All lanes:
Western blot - Anti-beta Synuclein antibody [EP1537Y] (ab76111) at 1/10000 dilution

Lane 1:
His-Tagged human beta Synuclein (aa 1 to 134) recombinant protein at 0.015 µg

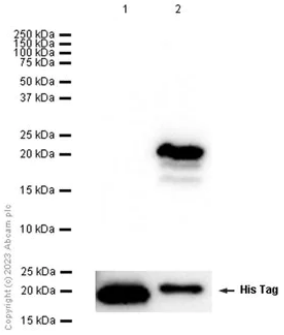
Lane 2:
His-Tagged alpha synuclein (aa 1 to 140) recombinant protein at 0.015 µg

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-beta Synuclein antibody [EP1537Y] - BSA and Azide free (ab221908)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
Lane 1:
His-Tagged human beta Synuclein (aa 1 to 134) recombinant protein at 15 µg

Lane 2:
His-Tagged human alpha synuclein (aa 1 to 140) recombinant protein at 15 µg

Secondary

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

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