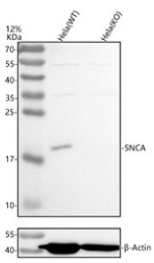
SNCA Antibody / Alpha-Synuclein Polyclonal Antibody (FY12837)

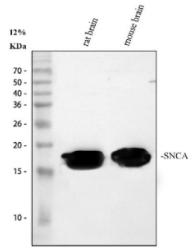
Catalog No.	Formulation	Size
FY12837	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

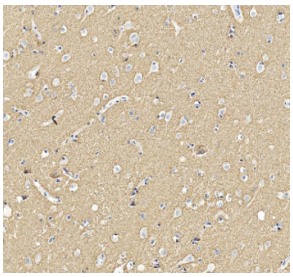
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
UniProt	P37840
Localization	Cytoplasmic, Nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This SNCA Antibody / Alpha-Synuclein Polyclonal Antibody is available for research use only.



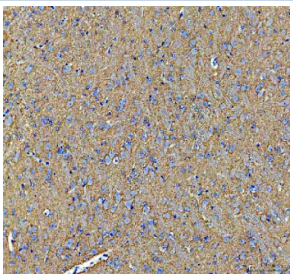
SNCA Antibody WB in HeLa Wild-Type and SNCA Knockout Cells. Western blot analysis of human HeLa wild-type (lane 1) and SNCA knockout (lane 2) whole-cell lysates using the Alpha-Synuclein Polyclonal Antibody. A band at approximately 18 kDa is detected in wild-type cells and is absent from the knockout sample, supporting SNCA-specific recognition. The calculated molecular weight of alpha-synuclein is approximately 14 kDa, although the protein commonly exhibits slower electrophoretic migration due to its intrinsically disordered structure. Samples were loaded at 30 ug per lane and separated by 12% SDS-PAGE under reducing conditions. The primary antibody was used at 0.5 ug/ml, with beta-actin serving as the loading control.



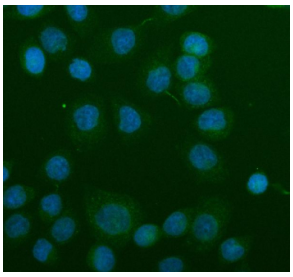
SNCA Antibody WB in Rat and Mouse Brain. Western blot analysis of rat brain (lane 1) and mouse brain (lane 2) tissue lysates using the Alpha-Synuclein Polyclonal Antibody. A prominent band is detected at approximately 16-18 kDa in both samples, compared with the calculated molecular weight of approximately 14.5 kDa for alpha-synuclein. The higher apparent molecular weight is consistent with the anomalous electrophoretic migration commonly observed for this intrinsically disordered protein. Samples were separated by 13% SDS-PAGE under reducing conditions. The primary antibody was used at 0.5 ug/ml.



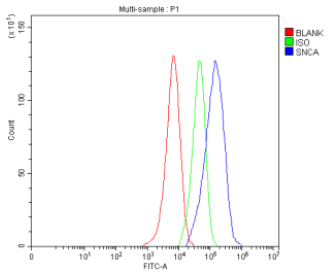
SNCA Antibody IHC in Human Brain. Immunohistochemical staining of FFPE human brain tissue using the Alpha-Synuclein Polyclonal Antibody at 2 ug/ml. Brown DAB staining is observed throughout the neuropil, with a diffuse, finely granular pattern consistent with the predominantly presynaptic distribution of alpha-synuclein. Neuronal cell bodies exhibit comparatively limited staining, while scattered regions show more concentrated immunoreactivity. Heat-induced epitope retrieval was performed in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. The primary antibody was incubated overnight at 4Â°C, and detection was performed using an HRP-conjugated secondary antibody with DAB as the chromogen.



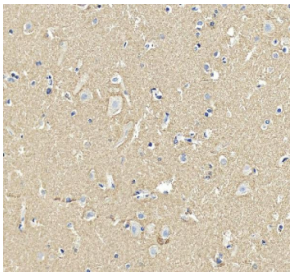
SNCA Antibody IHC in Rat Brain. Immunohistochemical staining of FFPE rat brain tissue using the Alpha-Synuclein Polyclonal Antibody at 2 ug/ml. Brown DAB staining is observed extensively throughout the neuropil, exhibiting a diffuse, finely granular pattern with areas of more concentrated punctate immunoreactivity. The distribution is consistent with the enrichment of alpha-synuclein in presynaptic regions, while neuronal cell bodies show comparatively limited staining. Heat-induced epitope retrieval was performed in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. The primary antibody was incubated overnight at 4Â°C, and detection was performed using an HRP-conjugated secondary antibody with DAB as the chromogen.



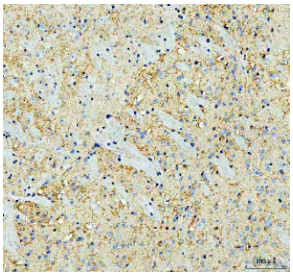
Immunofluorescent staining of SNCA using anti-SNCA antibody (green). SNCA was detected in an immunocytochemical section of SiHa cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-SNCA antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. The section was counterstained with DAPI nuclear stain (blue). Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Flow Cytometry analysis of U87 cells using anti-SNCA antibody. Overlay histogram showing U87 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-SNCA antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Immunohistochemical staining of SNCA using anti-SNCA antibody. SNCA was detected in a paraffin-embedded section of human brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-SNCA antibody overnight at 4oC. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37oC. The tissue section was developed using an HRP secondary and DAB substrate.



SNCA Antibody IHC in Mouse Brain. Immunohistochemical staining of FFPE mouse brain tissue using the Alpha-Synuclein Polyclonal Antibody at 2 ug/ml. Brown DAB staining is observed throughout the neuropil, with a finely granular and punctate distribution and areas of more concentrated immunoreactivity surrounding neuronal cell bodies. This staining pattern is consistent with the predominantly presynaptic localization of alpha-synuclein, while neuronal nuclei exhibit comparatively limited staining. Heat-induced epitope retrieval was performed in EDTA buffer (pH 8.0), followed by blocking with 10% goat serum. The primary antibody was incubated overnight at 4Â°C, and detection was performed using an HRP-conjugated secondary antibody with DAB as the chromogen.

Description

SNCA Antibody / Alpha-Synuclein Polyclonal Antibody targets alpha-synuclein, a small, intrinsically disordered protein encoded by the SNCA gene and involved in synaptic vesicle regulation, neurotransmitter release, and neuronal homeostasis. Alpha-synuclein belongs to the synuclein family alongside beta-synuclein and gamma-synuclein. Although concentrated at presynaptic terminals, it can also associate with other cellular membranes and participate in processes involving lipid organization and intracellular trafficking. Its ability to adopt different conformations depending on the surrounding environment is central to both its normal biological functions and its involvement in neurodegenerative disease.

Alpha-synuclein contains an amphipathic N-terminal region that interacts with lipid membranes, a hydrophobic central region known as the non-amyloid-beta component (NAC), and an acidic C-terminal region involved in protein interactions and conformational regulation. Membrane binding promotes the formation of alpha-helical structures, while unbound alpha-synuclein remains highly dynamic. The protein interacts with synaptic vesicle components and has been implicated in regulating vesicle clustering, recycling, and neurotransmitter release. Interactions with synaptobrevin-2, also known as VAMP2, suggest a role in organizing SNARE-associated processes involved in synaptic vesicle fusion.

Under pathological conditions, alpha-synuclein can misfold and assemble into soluble oligomers, protofibrils, and amyloid fibrils. Aggregated alpha-synuclein is a major component of Lewy bodies and Lewy neurites, characteristic pathological structures associated with Parkinson's disease and dementia with Lewy bodies. Abnormal alpha-synuclein accumulation is also implicated in multiple system atrophy. These disorders are collectively classified as synucleinopathies, although their affected cell populations and patterns of protein accumulation differ. Genetic alterations involving SNCA, including missense mutations and gene multiplications, further establish a connection between alpha-synuclein abundance, aggregation, and neurodegeneration.

Alpha-synuclein undergoes several post-translational modifications, including phosphorylation, ubiquitination, nitration, and N-terminal acetylation. Phosphorylation at Ser129 is particularly enriched in pathological aggregates, although its precise contribution to aggregation and toxicity remains an active area of investigation. Misfolded alpha-synuclein can disrupt mitochondrial function, protein clearance pathways, and intracellular membrane trafficking. Evidence also supports the ability of certain aggregated species to promote templated misfolding and propagation between cells. Understanding how these processes interact with normal synaptic functions remains important for defining mechanisms of neuronal vulnerability. The SNCA Antibody provides a means of investigating alpha-synuclein expression in relation to synaptic regulation, protein homeostasis, and neurodegenerative disease mechanisms.

Explore our Neuroscience Antibodies collection for additional research antibodies targeting proteins involved in synaptic signaling, neuronal function, protein aggregation, and neurodegenerative disease mechanisms.

Application Notes

Optimal dilution of the SNCA Antibody / Alpha-Synuclein Polyclonal Antibody should be determined by the researcher.

Immunogen

E.coli-derived human Alpha Synuclein/SNCA recombinant protein (Position: M1-D135) was used as the immunogen for the SNCA antibody.

Storage

After reconstitution, the SNCA antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Alpha synuclein antibody, Alpha-synuclein protein antibody, Synuclein alpha antibody, Alpha synuclein 140 antibody, Non-amyloid beta component precursor antibody, NACP antibody, Parkinson disease protein 1 antibody, Synuclein family alpha protein antibody

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