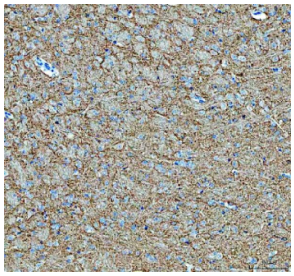
SNCB Antibody / Beta Synuclein (FY12515)

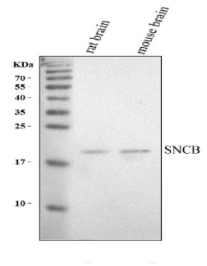
Catalog No.	Formulation	Size
FY12515	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

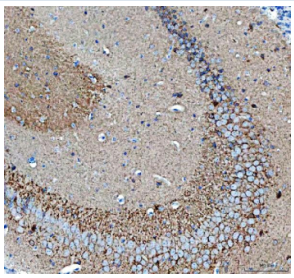
Availability	1-2 days
Species Reactivity	Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q91ZZ3
Localization	Cytoplasm
Applications	Western Blot: 0.25-0.5ug/ml Immunohistochemistry: 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This SNCB antibody is available for research use only.



Immunohistochemical staining of SNCB using anti-SNCB antibody. SNCB was detected in a paraffin-embedded section of rat 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-SNCB 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.



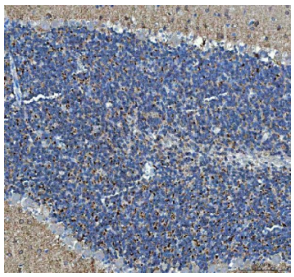
Western blot analysis of SNCB using anti-SNCB antibody. Electrophoresis was performed on a 12% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: rat brain tissue lysates, Lane 2: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-SNCB antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. SNCB (~14 kDa predicted) was detected as a single band at ~19 kDa, consistent with the known anomalous SDS-PAGE migration of beta-synuclein caused by its acidic and intrinsically disordered structure.



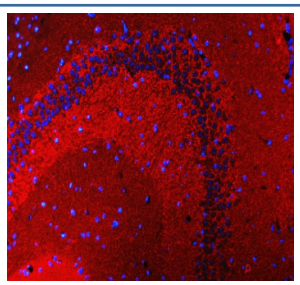
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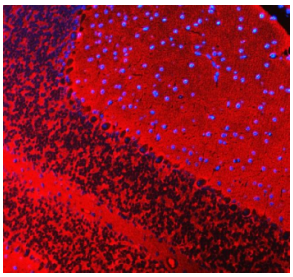
Immunohistochemical staining of SNCB using anti-SNCB antibody. SNCB was detected in a paraffin-embedded section of rat cerebellum tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-SNCB 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.



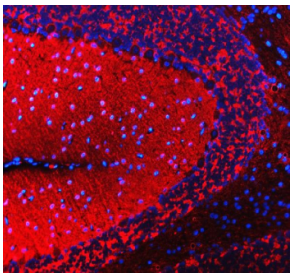
Immunohistochemical staining of SNCB using anti-SNCB antibody. SNCB was detected in a paraffin-embedded section of mouse cerebellum tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-SNCB 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.



Immunofluorescent staining of SNCB using anti-SNCB antibody (red). SNCB was detected in a paraffin-embedded section of mouse 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 5 ug/ml rabbit anti-SNCB antibody overnight at 4oC. DyLight 550 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.



Immunofluorescent staining of SNCB using anti-SNCB antibody (red). SNCB was detected in a paraffin-embedded section of mouse cerebellum 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 5 ug/ml rabbit anti-SNCB antibody overnight at 4oC. DyLight 550 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.



Immunofluorescent staining of SNCB using anti-SNCB antibody(red). SNCB was detected in a paraffin-embedded section of rat cerebellum 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 5 ug/ml rabbit anti-SNCB antibody overnight at 4oC. DyLight 550 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.

Description

SNCB antibody detects Beta-synuclein, a presynaptic neuronal protein belonging to the synuclein family, which also includes alpha- and gamma-synuclein. Beta-synuclein is abundant in the brain, particularly in synaptic terminals, and functions in synaptic vesicle regulation, neurotransmitter release, and neuronal plasticity. The SNCB antibody is used in neuroscience, neurodegeneration, and synaptic biology research.

Beta-synuclein is encoded by the SNCB gene located on human chromosome 5q35.2. The protein is approximately 134 amino acids in length and intrinsically disordered, allowing it to adopt multiple conformations upon membrane binding. Unlike alpha-synuclein, Beta-synuclein lacks the hydrophobic non-amyloid component domain that promotes aggregation, and therefore is considered non-amyloidogenic under physiological conditions. This makes it an important natural modulator of synuclein aggregation balance.

The SNCB antibody detects a 14-20 kilodalton protein by western blot and shows intense staining in synaptic regions under immunohistochemistry. Beta-synuclein associates with synaptic vesicles through lipid interactions and regulates neurotransmitter release by modulating SNARE complex dynamics. It may act as a molecular chaperone preventing pathological alpha-synuclein aggregation. Reduced expression or mutations in SNCB have been linked to dementia with Lewy bodies and Parkinson-like neurodegenerative disorders.

Beta-synuclein also influences calcium signaling, vesicle recycling, and synaptic stability. Its expression is developmentally regulated, increasing as neurons mature. Under oxidative stress or protein misfolding conditions, Beta-synuclein may acquire toxic gain-of-function properties, forming soluble oligomers that disrupt vesicular trafficking. Recent evidence indicates that it may modulate dopaminergic neuron vulnerability through redox regulation and mitochondrial interactions.

Beyond neurodegeneration, Beta-synuclein is expressed in certain endocrine and peripheral tissues, where it regulates vesicle release. It has potential as a biomarker for neurological diseases and as a therapeutic target to stabilize alpha-synuclein homeostasis. NSJ Bioreagents provides a validated SNCB antibody optimized for its applications, facilitating research on synaptic physiology, neurodegenerative mechanisms, and synuclein biology.

Application Notes

Optimal dilution of the SNCB antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of mouse SNCB was used as the immunogen for the SNCB antibody.

Storage

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

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