Overview

Product name: Anti-Alpha-synuclein antibody

Description: Sheep polyclonal to Alpha-synuclein

Host species: Sheep

Specificity: Human and rat alpha synuclein. Cross reactivity: This antibody is known to react with human, mouse, rat and other rodents. Cross reactivity with other species has not yet been tested.

Tested applications:

Suitable for: IHC-FoFr, Dot blot, IHC-Fr, IHC-P, WB

Unsuitable for: Flow Cyt or ICC/IF

Species reactivity: Reacts with: Mouse, Rat, Human


Sequence: C-MPVDPDNEAYEMPSEE

Properties

Form: Liquid

Storage instructions: Shipped at 4°C. Store at +4°C short term (1-2 weeks). Add glycerol to a final volume of 50% for extra stability and aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.

Purity: Immunogen affinity purified

Clonality: Polyclonal

Isotype: IgG

Applications

Our Abpromise guarantee covers the use of ab6162 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
**Application** | **Abreviews** | **Notes**
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IHC-FoFr | ★★★★★ | Use a concentration of 2 µg/ml.
Dot blot |  | Use a concentration of 0.5 µg/ml.
IHC-Fr | ★★★★★ | 1/500 - 1/1000.
IHC-P | ★★★★★ | Use a concentration of 1 µg/ml. PubMed: 20106867
WB |  | Use a concentration of 0.5 µg/ml.

**Application notes**
Is unsuitable for Flow Cyt or ICC/IF.

**Target**

**Function**
May be involved in the regulation of dopamine release and transport. Induces fibrillization of microtubule-associated protein tau. Reduces neuronal responsiveness to various apoptotic stimuli, leading to a decreased caspase-3 activation.

**Tissue specificity**
Expressed principally in brain but is also expressed in low concentrations in all tissues examined except in liver. Concentrated in presynaptic nerve terminals.

**Involvement in disease**
Genetic alterations of SNCA resulting in aberrant polymerization into fibrils, are associated with several neurodegenerative diseases (synucleinopathies). SNCA fibrillar aggregates represent the major non A-beta component of Alzheimer disease amyloid plaque, and a major component of Lewy body inclusions. They are also found within Lewy body (LB)-like intraneuronal inclusions, glial inclusions and axonal spheroids in neurodegeneration with brain iron accumulation type 1.
Parkinson disease 1
Parkinson disease 4
Dementia Lewy body

**Sequence similarities**
Belongs to the synuclein family.

**Domain**
The 'non A-beta component of Alzheimer disease amyloid plaque' domain (NAC domain) is involved in fibrils formation. The middle hydrophobic region forms the core of the filaments. The C-terminus may regulate aggregation and determine the diameter of the filaments.

**Post-translational modifications**
Phosphorylated, predominantly on serine residues. Phosphorylation by CK1 appears to occur on residues distinct from the residue phosphorylated by other kinases. Phosphorylation of Ser-129 is selective and extensive in synucleinopathy lesions, In vitro, phosphorylation at Ser-129 promoted insoluble fibril formation. Phosphorylated on Tyr-125 by a PTK2B-dependent pathway upon osmotic stress.

Hallmark lesions of neurodegenerative synucleinopathies contain alpha-synuclein that is modified by nitration of tyrosine residues and possibly by dityrosine cross-linking to generated stable oligomers.
Ubiquitinated. The predominant conjugate is the diubiquitinated form.
Acetylation at Met-1 seems to be important for proper folding and native oligomeric structure.

**Cellular localization**

**Images**

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Immunohistochemistry (Frozen sections) - Anti-
Alpha-synuclein antibody (ab6162)

This image is courtesy of an anonymous Abreview

ab6162 at a 1/40 dilution staining human brain tissue sections by Immunohistochemistry (Frozen sections). The tissue was paraformaldehyde fixed and blocked with serum before incubation with ab6162 for 1 hour. A vector ABC kit was used to detect bound antibody.

Immunohistochemistry (PFA perfusion fixed frozen sections) - Anti-Alpha-synuclein antibody (ab6162)

This image is courtesy of an abreview submitted by Ruma Raha-Chowdhury, University Of Cambridge, United Kingdom

IHC-FoFr image of Alpha Synuclein staining on alpha Synuclein Trasgenic mouse brain section stained using ab6162. The animal were perfuse with 4% PFA. The sections were incubated in 10% normal donkey serum in 0.1% PBS- and triton 0.3X100 for 1h to permeabilise the cells and block non-specific protein-protein interactions. The sections were then incubated with the antibody ab 6162, 2 µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 anti-sheep IgG (H+L) used at a 1/1000 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

Western blot - Anti-Alpha-synuclein antibody (ab6162)

All lanes : Anti-Alpha-synuclein antibody (ab6162) at 1 µg/ml

Lane 1 : Recombinant Human a -synuclein at 0.1 µg
Lane 2 : Mouse brain lysate at 30 µg

Secondary
All lanes : anti-sheep HRP at 1/6000 dilution
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Alpha-synuclein antibody (ab6162)

This image is courtesy of an anonymous Abreview

ab6162 staining Alpha-synuclein in rat brain tissue sections by Immunohistochemistry (PFA perfusion fixed frozen sections). Tissue samples were fixed by perfusion with formaldehyde, blocked with PB ab64226 for 10 minutes at room temperature and antigen retrieval was by heat mediation in citrate buffer. The sample was incubated with primary antibody (1/200) for 30 minutes. An undiluted HRP-conjugated rabbit anti-goat polyclonal was used as the secondary antibody.

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