Anti-Alpha-synuclein antibody [4D6] ab1903

**Overview**

**Product name**
Anti-Alpha-synuclein antibody [4D6]

**Description**
Mouse monoclonal [4D6] to Alpha-synuclein

**Host species**
Mouse

**Tested applications**
Suitable for: IHC-FoFr, WB, IHC-P, IHC-Fr, ELISA
Unsuitable for: Flow Cyt or ICC

**Species reactivity**
Reacts with: Mouse, Rat, Human

**Immunogen**
Recombinant full length protein corresponding to Human Alpha-synuclein.

**Properties**

**Form**
Liquid

**Storage instructions**
Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

**Storage buffer**
Constituent: PBS

**Purity**
Protein A purified

**Purification notes**
Ammonium sulfate precipitated and dialyzed tissue culture supernatant.

**Clonality**
Monoclonal

**Clone number**
4D6

**Isotype**
IgG1

**Applications**

Our Abpromise guarantee covers the use of ab1903 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHC-FoFr</td>
<td>1/300. PubMed: 17227870</td>
<td>Perfuse with 4% paraformaldehyde with 0.4% picric acid in 0.16 M phosphate buffer and postfix.</td>
</tr>
<tr>
<td>WB</td>
<td>★★☆☆☆</td>
<td>1/100 - 1/10000. Predicted molecular weight: 16 kDa.</td>
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<td>Application</td>
<td>Abreviews</td>
<td>Notes</td>
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<tr>
<td>IHC-P</td>
<td>⭐⭐⭐⭐</td>
<td>1/100 - 1/1000. Antigen retrieval is not essential but may optimise staining.</td>
</tr>
<tr>
<td>IHC-Fr</td>
<td></td>
<td>1/100 - 1/1000.</td>
</tr>
<tr>
<td>ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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</table>

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

### 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 fibril 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
α-Synuclein (α-syn) and S129-phosphorylated α-synuclein protein levels in SNCA/SNCA mouse brains after 12 days of treatment with 4mM ambroxol (Amb). (A) Western blotting for α-synuclein (using ab1903) and serine 129 (S129)-phosphorylated α-synuclein protein (using ab51253) in the brainstem (example blots shown).

All lanes: Anti-Alpha-synuclein antibody [4D6] (ab1903) at 5 µg/ml

Lane 1: A549 (Human lung adenocarcinoma epithelial cell line) Whole Cell Lysate

Lane 2: SK N BE (Human neuroblastoma) Whole Cell Lysate

Lane 3: SK N SH (Human neuroblastoma) Whole Cell Lysate

Lysates/proteins at 10 µg per lane.

Secondary

All lanes: Goat polyclonal to Mouse IgG - H&L - Pre-Adsorbed (HRP) at 1/3000 dilution

Predicted band size: 16 kDa

Observed band size: 16 kDa

Additional bands at: 18 kDa (possible post-translational modification), 80 kDa (possible post-translational modification)
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Alpha-synuclein antibody [4D6] (ab1903)

IHC-P using ab1903 showing lewy bodies in a substantia nigra neuron(x400)

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