abcam

Product datasheet

Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)] ab168381

Recombinant RabMAb

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Overview

Product name	Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)]
Description	Rabbit monoclonal [MJF-R13 (8-8)] to Alpha-synuclein (phospho S129)
Host species	Rabbit
Specificity	This antibody only detects alpha Synuclein phosphorylated on Ser129.
Tested applications	**Suitable for:** WB **Unsuitable for:** Flow Cyt,ICC/IF,IHC-P or IP
Species reactivity	**Reacts with:** Human
Immunogen	Synthetic peptide within Human Alpha-synuclein (phospho S129). The exact sequence is proprietary. Database link: **P37840**
Positive control	Recombinant alpha-synuclein, expressed in BL21 bacterial cells in the presence of Human Polo-Like Kinase 2; HEK whole cell lysates, stably-transfected with Polo-Like Kinase 2 and alpha Synuclein.
General notes	Alpha-synuclein was the first gene to be linked to Parkinson's disease (PD) and remains the most promising link to PD pathogenesis, where there is genetic evidence that it may play a causal role. In the brain, alpha-synuclein is concentrated in presynaptic nerve terminals. The deposition of the abundant presynaptic brain protein alpha-synuclein as fibrillary aggregates in neurons or glial cells is a hallmark lesion in a subset of neurodegenerative disorders. These disorders include Parkinson's disease (PD), dementia with Lewy bodies (DLB) and multiple system atrophy, collectively referred to as synucleinopathies. Parkinson's disease (PD) is a common neurodegenerative disorder characterized by the progressive accumulation in selected neurons of protein inclusions containing alpha-synuclein and ubiquitin. Recent studies also indicate that alpha-synuclein undergoes post-translational modification. Though the role of many of these modifications is still under investigation, phosphorylation at Serine 129 may affect alpha-synuclein aggregations and may also serve as marker of disease pathogenesis. With the advent of this phospho-specific Serine 129 antibody, The Michael J. Fox Foundation hopes to ensure that the putative role of this modification can be further examined by all researchers. 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 production

For more information **see here**.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

This antibody was developed with support from The Michael J. Fox Foundation.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol, 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	MJF-R13 (8-8)
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab168381 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
WB	★★★★★ **(3)**	1/1000. Predicted molecular weight: 14 kDa.

Application notes Is unsuitable for Flow Cyt,ICC/IF,IHC-P or IP.

Target

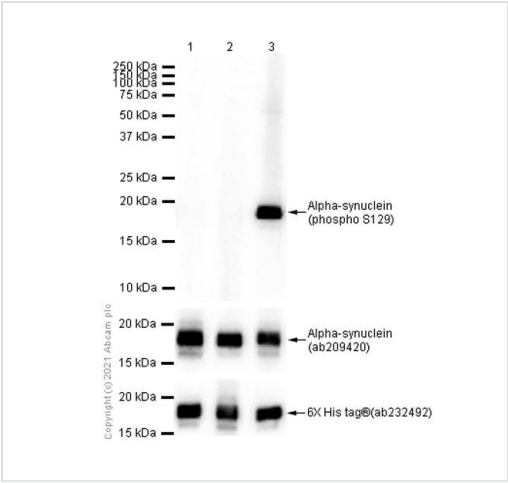
Function May be involved in the regulation of dopamine release and transport. Induces fibrillization of microtubule-associated protein tau. Reduces neuronal responsiveness to various apoptotic stimuli, leading to a decreased caspase-3 activation.

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	Cytoplasm, cytosol. Membrane. Nucleus. Cell junction, synapse. Secreted. Membrane-bound in dopaminergic neurons.

Images



Western blot - Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)] (ab168381)

All lanes : Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)] (ab168381)

Lane 1 : In vitro kinase assay of Alpha Synuclein phosphorylation using His tagged human full length recombinant alpha-synuclein protein in the presence of PLK2 (Polo-like kinase 2) but absence of ATP

Lane 2 : In vitro kinase assay of Alpha Synuclein phosphorylation using His tagged human full length recombinant alpha-synuclein protein in the presence of ATP but absence of PLK2 (Polo-like kinase 2)

Lane 3 : In vitro kinase assay of Alpha Synuclein phosphorylation using His tagged human full length recombinant alpha-synuclein protein in the presence of PLK2 (Polo-like kinase 2) and ATP

Secondary

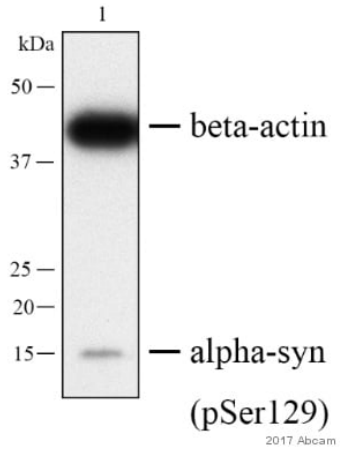
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

Predicted band size: 14 kDa

Observed band size: 17 kDa

Blocking and Diluting buffer and concentration - 5% NFDM/TBST

Exposure time: 5 seconds



Western blot - Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)] (ab168381)

Image courtesy of Mr. Chun Chau SUNG

Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)] (ab168381) at 1/2000 dilution + Mouse cortical neuron lysate at 30 µg

Secondary

Goat anti-rabbit IgG (H+L) HRP

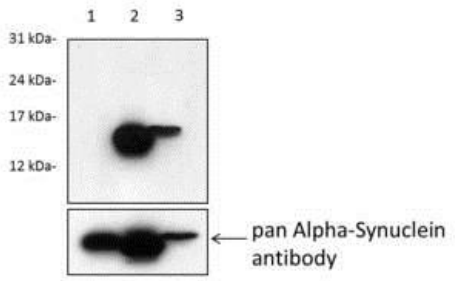
Developed using the ECL technique.

Predicted band size: 14 kDa

Exposure time: 5 minutes

Lysate prepared in PBS + 1% Triton X-100. Membrane fixed with 0.4% PFA in PBS for 30 min prior to blocking.

Primary incubation for 12 hours at 4°C.



Western blot - Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)] (ab168381)

This image is courtesy of Drs. Shyra Gardai and Jennifer Johnston (Elan Pharmaceuticals)

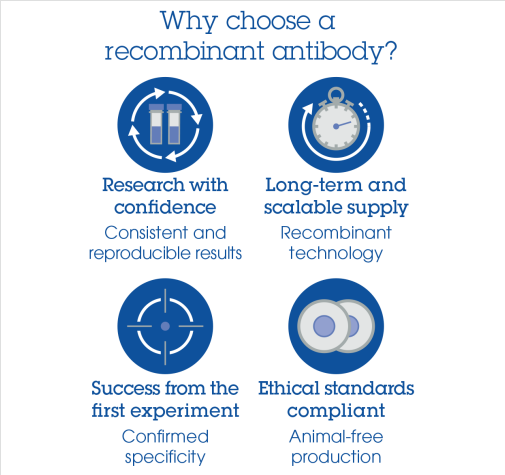
All lanes : Anti-Alpha-synuclein (phospho S129) antibody [MJF-R13 (8-8)] (ab168381) at 1/1000 dilution

Lane 1 : Recombinant alpha Synuclein expressed in BL21 bacterial cells

Lane 2 : Recombinant alpha Synuclein expressed in BL21 bacterial cells, in the presence of Human Polo-Like Kinase 2

Lane 3 : HEK whole cell lysates, stably-transfected with Polo-Like Kinase 2 and alpha Synuclein

Predicted band size: 14 kDa



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