

## ARG43207 anti-alpha Synuclein antibody [2A7]

Package: 100 µl, 50 µl  
Store at: -20°C

### Summary

Product Description	Mouse Monoclonal antibody [2A7] recognizes alpha Synuclein
Tested Reactivity	Hu, Ms, Rat, Cow, Pig
Tested Application	ICC/IF, IHC-Fr, IHC-P, WB
Host	Mouse
Clonality	Monoclonal
Clone	2A7
Isotype	IgG1
Target Name	alpha Synuclein
Species	Human
Immunogen	Recombinant full length Human alpha synuclein protein.
Conjugation	Un-conjugated
Alternate Names	Non-A4 component of amyloid precursor; Alpha-synuclein; PARK4; PARK1; PD1; NACP; Non-A beta component of AD amyloid

### Application Instructions

Application table	Application	Dilution
	ICC/IF	1:1000
	IHC-Fr	1:1000
	IHC-P	1:1000
	WB	1:1000
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	
Positive Control	Rat brain and Rat spinal cord	
Observed Size	~ 17 kDa	

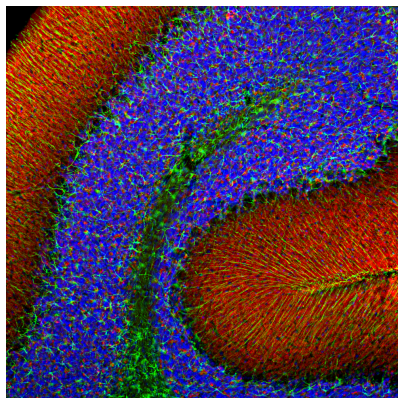
### Properties

Form	Liquid
Purification	Purified
Buffer	PBS, 5 mM Sodium azide and 50% Glycerol.
Preservative	5 mM Sodium azide
Stabilizer	50% Glycerol

Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

## Bioinformation

Gene Symbol	SNCA
Gene Full Name	synuclein, alpha (non A4 component of amyloid precursor)
Background	Alpha-synuclein is a member of the synuclein family, which also includes beta- and gamma-synuclein. Synucleins are abundantly expressed in the brain and alpha- and beta-synuclein inhibit phospholipase D2 selectively. SNCA may serve to integrate presynaptic signaling and membrane trafficking. Defects in SNCA have been implicated in the pathogenesis of Parkinson disease. SNCA peptides are a major component of amyloid plaques in the brains of patients with Alzheimer's disease. Alternatively spliced transcripts encoding different isoforms have been identified for this gene. [provided by RefSeq, Feb 2016]
Function	Neuronal protein that plays several roles in synaptic activity such as regulation of synaptic vesicle trafficking and subsequent neurotransmitter release. Participates as a monomer in synaptic vesicle exocytosis by enhancing vesicle priming, fusion and dilation of exocytotic fusion pores (PubMed:28288128, PubMed:30404828). Mechanistically, acts by increasing local Ca(2+) release from microdomains which is essential for the enhancement of ATP-induced exocytosis (PubMed:30404828). Acts also as a molecular chaperone in its multimeric membrane-bound state, assisting in the folding of synaptic fusion components called SNAREs (Soluble NSF Attachment Protein REceptors) at presynaptic plasma membrane in conjunction with cysteine string protein-alpha/DNAJC5 (PubMed:20798282). This chaperone activity is important to sustain normal SNARE-complex assembly during aging (PubMed:20798282). Plays also a role in the regulation of the dopamine neurotransmission by associating with the dopamine transporter (DAT1) and thereby modulating its activity (PubMed:26442590). [UniProt]
Calculated Mw	14 kDa
PTM	<p>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.</p> <p>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.</p> <p>Ubiquitinated. The predominant conjugate is the diubiquitinated form (By similarity).</p> <p>Acetylation at Met-1 seems to be important for proper folding and native oligomeric structure. [UniProt]</p>
Cellular Localization	Cytoplasm, cytosol. Membrane. Nucleus. Cell junction, synapse. Secreted. Note=Membrane-bound in dopaminergic neurons. [UniProt]



#### ARG43207 anti-alpha Synuclein antibody [2A7] IHC-Fr image

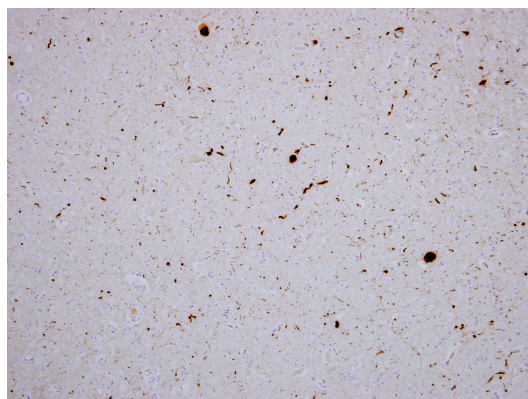
Immunohistochemistry: Frozen section of Rat cerebellum tissue stained with ARG43207 anti-alpha Synuclein antibody [2A7] (red) at 1:1000 dilution, and costained with anti-GFAP antibody (green) at 1:5000 dilution. Hoechst (blue) for nuclear staining. Sample preparation: Following transcardial perfusion of Rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45  $\mu$ M, and free-floating sections were stained with above antibodies.

The alpha synuclein protein is concentrated in synaptic regions, while the GFAP antibody stains the filamentous cytoskeleton of Bergmann glia and astrocytic cells.



#### ARG43207 anti-alpha Synuclein antibody [2A7] WB image

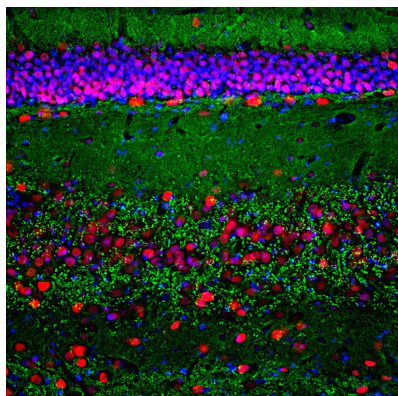
Western blot: Rat brain and Rat spinal cord lysates stained with ARG43207 anti-alpha Synuclein antibody [2A7] (green) at 1:1000 dilution.



#### ARG43207 anti-alpha Synuclein antibody [2A7] IHC-P image

Immunohistochemistry: Paraffin-embedded cortex tissue of a patient with Parkinson's disease. Tissue section was stained with ARG43207 anti-alpha Synuclein antibody [2A7] at 1:1000 dilution. Antibody revealed with HRP and DAB.

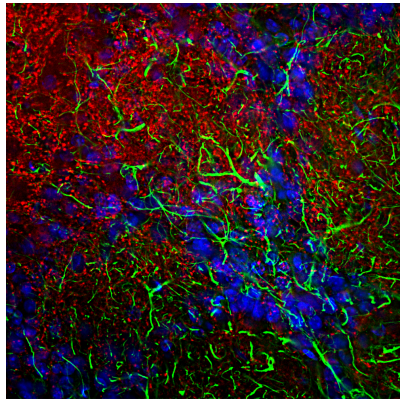
The Lewy bodies and other typical inclusions of Parkinson's disease are seen in brown.



#### ARG43207 anti-alpha Synuclein antibody [2A7] IHC-Fr image

Immunohistochemistry: Frozen section of Rat hippocampus tissue stained with ARG43207 anti-alpha Synuclein antibody [2A7] (green) at 1:1000 dilution, and costained with anti-MeCP2 antibody (red) at 1:2000 dilution. DAPI (blue) for nuclear staining. Sample preparation: Following transcardial perfusion of Rat with 4% paraformaldehyde, brain was post fixed for 1 hour, cut to 45  $\mu$ M, and free-floating sections were stained with above antibodies.

The alpha synuclein protein is concentrated in synaptic regions, and the MeCP2 antibody stains the nuclei of neuronal cells.



#### ARG43207 anti-alpha Synuclein antibody [2A7] IHC-Fr image

Immunohistochemistry: Frozen section of Rat olfactory bulb tissue stained with ARG43207 anti-alpha Synuclein antibody [2A7] (red) at 1:1000 dilution, and costained with anti-GFAP antibody (green) at 1:5000 dilution. DAPI (blue) for nuclear staining. Sample preparation: Following transcardial perfusion of Rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45  $\mu$ M, and free-floating sections were stained with above antibodies.

The alpha synuclein protein is concentrated in synaptic regions, while the GFAP antibody stains the filamentous backbone of astroglial cells.