

PRODUCT INFORMATION



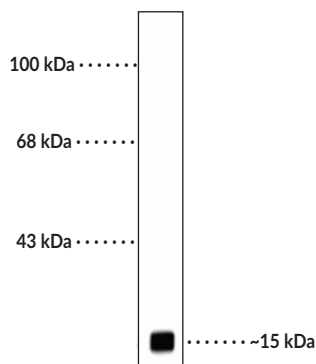
α -Synuclein Monoclonal Antibody

Item No. 29251

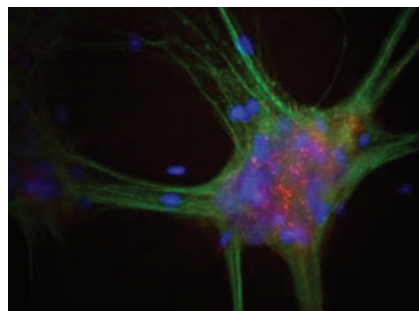
Overview and Properties

Contents:	This vial contains 100 μ l of protein G-purified monoclonal antibody.
Synonyms:	SNCA, α -Syn
Immunogen:	Full-length human α -synuclein expressed in <i>E. coli</i>
Molecular Weight:	~15 kDa
Species Reactivity:	(+) Human, mouse, rat
Storage:	-20°C (as supplied)
Stability:	\geq 1 year
Storage Buffer:	PBS with 50% glycerol and 5 mM sodium azide
Host:	Mouse
Isotype:	IgG1
Applications:	Immunocytochemistry (ICC) and Western blot (WB); the recommended starting dilution for ICC and WB is 1:500 and 1:1,000, respectively. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of rat brain lysate showing specific immunolabeling of the ~15 kDa α -synuclein protein.



Immunofluorescence of mixed neuron-glia cultures co-labeled with α -Synuclein Monoclonal Antibody (Item No. 29251, 1:500, red) and MAP2 (bovine) Polyclonal Antibody (Item No. 29281, 1:2,500, green) and nuclear staining with DAPI. The α -Synuclein Monoclonal Antibody labels vesicular structures, the perikarya, and processes of the neurons in this image.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

α -Synuclein is a 140-amino acid intracellular protein encoded by the *SNCA* gene in humans.¹ It is primarily localized to the synaptic terminal of neurons in both the central and peripheral nervous systems where it has a role in regulation of synaptic vesicle docking and neurotransmitter release.² α -Synuclein is an intrinsically disordered, multi-domain protein composed of a negatively charged C-terminal domain that provides structural flexibility, a central hydrophobic region with a high propensity to aggregate, and a positively charged N-terminal domain containing a repeated consensus sequence KTKEGV.^{1,3} It exists as monomer in the cytoplasm, however, mutations, posttranslational modifications, and changes in cellular environmental conditions can induce oligomerization and aggregate formation. Aggregated α -synuclein is found in Lewy bodies that occur in Parkinson's disease and diffuse Lewy body disease, as well as in glial cells in postmortem brains from patients with multiple system atrophy (MSA) and amyotrophic lateral sclerosis (ALS). Cayman's α -Synuclein Monoclonal Antibody can be used for immunocytochemistry (ICC) and Western blot (WB) applications. The antibody recognizes α -synuclein at approximately 15 kDa from human, mouse, and rat samples.

References

1. Villar-Piqué, A., da Fonseca, T.L., and Outeiro, T.F. Structure, function and toxicity of alpha-synuclein: The Bermuda triangle in synucleinopathies. *J. Neurochem.* **139(Suppl 1)**, 240-255 (2016).
2. Rocha, E.M., De Miranda, B., and Sanders, L.H. Alpha-synuclein: Pathology, mitochondrial dysfunction and neuroinflammation in Parkinson's disease. *Neurobiol. Dis.* **109(Pt B)**, 249-257 (2017).
3. Bendor, J.T., Logan, T.P., and Edwards, R.H. The function of α -synuclein. *Neuron* **79(6)**, 1044-1066 (2013).

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