Purified anti-α-Synuclein, 103-108

Catalog # / Size: 807801 / 200 µl  
807802 / 500 µl  
807803 / 1 ml

Previously: Covance Catalog# SIG-39730  
Signet Catalog# 9730-02, 9730-05, 9730-10

Clone: 4B12/Synuclein  
Isotype: Mouse IgG1

Immunogen: This antibody was developed using a purified, *E. coli* produced human α-synuclein.

Reactivity: Human

Preparation: The antibody was purified by affinity chromatography.

Formulation: Phosphate-buffered solution (no preservatives or carrier proteins).

Concentration: 1 mg/ml

Storage: The antibody solution should be stored undiluted between 2°C and 8°C. Please note the storage condition for this antibody has been changed from -20°C to between 2°C and 8°C. You can also check your vial or your CoA to find the most accurate storage condition for this antibody.

Applications:

Applications: ELISA, WB, IHC

Recommended Usage: Each lot of this antibody is quality control tested by ELISA assay.

The optimal working dilution should be determined for each specific assay condition.

- **WB**: 1:100-1:1,000*
- **IHC**: 1:100-1:1,000

Tissue Sections: Frozen and formalin-fixed paraffin-embedded tissues

Pretreatment: Not required

Application Notes: This antibody is effective in immunoblotting (WB), immunohistochemistry (IHC), and ELISA.

*Expected MW = 16 kD

This antibody reacts with human α-synuclein. It does not react with mouse or rat α-synuclein. The epitope lies within amino acids 103-108 of α-synuclein.

Application References:


Description: α-synuclein, Alpha-synuclein, is expressed principally in the central nervous system (brain) but is also expressed in low concentrations in a variety of tissues except liver. It is predominantly expressed in the neocortex, hippocampus, substantia nigra, thalamus, and cerebellum of the CNS. It is primarily a neuronal protein, but can also be found in the neuroglial cells. It is concentrated in presynaptic nerve terminals of neurons, as well as having reported nuclear and mitochondrial localization. α-synuclein interacts with plasma membrane phospholipids. α-synuclein in solution is considered to be an intrinsically disordered protein and thus lacks a stable secondary or tertiary structure. However, recent data suggests the presence of partial alpha helical as well as beta sheet structures as well as mostly structured tetrameric states in solution, the equilibrium of which may be altered by binding partners. The human α-synuclein protein is made of 140 amino acids, encoded by the SNCA gene. The primary structure is divided in three distinct domains: (1-60) - An amphipathic N-terminal region dominated by four 11-residue repeats including the consensus sequence KTKEGV. This sequence has a structural alpha helix propensity similar to apolipoproteins-binding domains. (61-95) - a central hydrophobic region which includes the non-amyloid-β component (NAC) region, involved in protein aggregation. (96–140) - a highly acidic and proline-rich region. At least three isoforms of synuclein are produced through alternative splicing. The most common form of the protein is the full 140 amino acid-long transcript. Other isoforms are alpha-synuclein-126, lacking residues 41-54; and α-synuclein-112, which lacks residues 103-130. α-synuclein may be involved in the regulation of dopamine release and transport and also may function to induce fibrillization of microtubule-associated protein tau. α-synuclein functions as a molecular chaperone in the formation of

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SNARE complexes. In particular, it can bind to phospholipids of the plasma membrane and to synaptobrevin-2 via its C-terminus domain to influence synaptic activity. α-synuclein is essential for normal development of the cognitive functions and that it significantly interacts with tubulin. It also reduces neuronal responsiveness to various apoptotic stimuli, leading to decreased caspase-3 activation. α-Synuclein fibrils are major substituent of the intracellular Lewy bodies seen in Parkinson's disease.

Other Names: NACP, PARK1, PARK4, PD1, Synuclein alpha-140, non-A4 component of amyloid, alpha-synuclein, isoform NACP140, non-A beta component of AD amyloid Parkinson disease (autosomal dominant, Lewy body) 4

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