

# $\alpha$ -synuclein (D-10): sc-515879

## BACKGROUND

The synuclein family members, including  $\alpha$ -synuclein (also designated NACP for non- $\beta$  amyloid component) and  $\beta$ -synuclein, are predominantly expressed in the brain and are speculated to be involved in synaptic regulation and neuronal plasticity.  $\alpha$ -synuclein is localized to neuronal cell bodies and synapses.  $\alpha$ -synuclein was first identified as a component of Alzheimer's disease amyloid plaques. Abnormal platelet function in Alzheimer's disease has been demonstrated. During megakaryocytic differentiation  $\alpha$ -synuclein has been found to be upregulated, while  $\beta$ -synuclein is downregulated, indicating that coordinate expression of synucleins may be important during hematopoietic cell differentiation. A mutant form of  $\alpha$ -synuclein has been found in patients with early onset Parkinson's disease.

## REFERENCES

1. Ueda, K., et al. 1993. Molecular cloning of cDNA encoding an unrecognized component of amyloid in Alzheimer's disease. *Proc. Natl. Acad. Sci. USA* 90: 11282-11286.
2. Jakes, R., et al. 1994. Identification of two distinct synucleins from human brain. *FEBS Lett.* 345: 27-32.
3. Iwai, A., et al. 1995. The precursor protein of non-A  $\beta$  component of Alzheimer's disease Amyloid is a presynaptic protein of the central nervous system. *Neuron* 14: 467-475.

## CHROMOSOMAL LOCATION

Genetic locus: SNCA (human) mapping to 4q22.1; Snca (mouse) mapping to 6 B3.

## SOURCE

$\alpha$ -synuclein (D-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 112-140 at the C-terminus of  $\alpha$ -synuclein of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

$\alpha$ -synuclein (D-10) is available conjugated to agarose (sc-515879 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515879 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515879 PE), fluorescein (sc-515879 FITC), Alexa Fluor® 488 (sc-515879 AF488), Alexa Fluor® 546 (sc-515879 AF546), Alexa Fluor® 594 (sc-515879 AF594) or Alexa Fluor® 647 (sc-515879 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515879 AF680) or Alexa Fluor® 790 (sc-515879 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition,  $\alpha$ -synuclein (D-10) is available conjugated to biotin (sc-515879 B), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

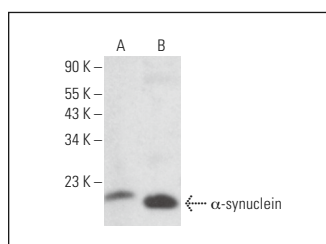
$\alpha$ -synuclein (D-10) is recommended for detection of  $\alpha$ -synuclein of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for  $\alpha$ -synuclein siRNA (h): sc-29619,  $\alpha$ -synuclein siRNA (m): sc-42286,  $\alpha$ -synuclein shRNA Plasmid (h): sc-29619-SH,  $\alpha$ -synuclein shRNA Plasmid (m): sc-42286-SH,  $\alpha$ -synuclein shRNA (h) Lentiviral Particles: sc-29619-V and  $\alpha$ -synuclein shRNA (m) Lentiviral Particles: sc-42286-V.

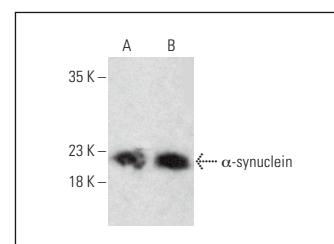
Molecular Weight of  $\alpha$ -synuclein: 14 kDa.

Positive Controls: rat brain extract: sc-2392, human brain extract: sc-364375 or mouse brain extract: sc-2253.

## DATA



$\alpha$ -synuclein (D-10): sc-515879. Western blot analysis of  $\alpha$ -synuclein expression in human brain (A) and rat brain (B) tissue extracts.



$\alpha$ -synuclein (D-10): sc-515879. Western blot analysis of  $\alpha$ -synuclein expression in rat brain (A) and mouse brain (B) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Pantazopoulou, M., et al. 2021. Distinct  $\alpha$ -synuclein species induced by seeding are selectively cleared by the lysosome or the proteasome in neuronally differentiated SH-SY5Y cells. *J. Neurochem.* 156: 880-896.
2. Pantazopoulou, M., et al. 2023. Differential intracellular trafficking of extracellular vesicles in microglia and astrocytes. *Cell. Mol. Life Sci.* 80: 193.
3. Sennett, C., et al. 2024.  $\alpha$ -synuclein deletion impairs platelet function: a role for SNARE complex assembly. *Cells* 13: 2089.
4. Savall, A.S.P., et al. 2025. Eugenia uniflora effects on the depressive-like behavior of MPTP-exposed female rats: apoptosis and  $\alpha$ -synuclein modulation. *Brain Sci.* 15: 41.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.