

# $\alpha$ -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<sup>®</sup> 488 (sc-515879 AF488), Alexa Fluor<sup>®</sup> 546 (sc-515879 AF546), Alexa Fluor<sup>®</sup> 594 (sc-515879 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-515879 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-515879 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-515879 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## STORAGE

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

## 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.

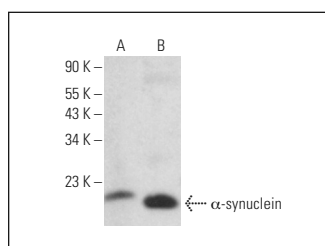
Molecular Weight of  $\alpha$ -synuclein: 14 kDa.

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

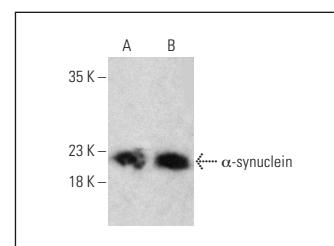
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## 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.

## RESEARCH USE

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