

α -synuclein (2B2D1): sc-53955

BACKGROUND

The synuclein family members, including α -synuclein (also designated NACP for non- β -Amyloid component) and β -synuclein, are predominantly expressed in the brain and are speculated to be involved in synaptic regulation and neuronal plasticity. α -synuclein is localized to neuronal cell bodies and synapses. α -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, α -synuclein has been found to be upregulated, while β -synuclein is downregulated, indicating that coordinate expression of synucleins may be important during hematopoietic cell differentiation. A mutant form of α -synuclein has been found in patients with early onset Parkinson's disease.

CHROMOSOMAL LOCATION

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

SOURCE

α -synuclein (2B2D1) is a mouse monoclonal antibody raised against purified truncated recombinant α -synuclein of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

α -synuclein (2B2D1) is available conjugated to agarose (sc-53955 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53955 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53955 PE), fluorescein (sc-53955 FITC), Alexa Fluor® 488 (sc-53955 AF488), Alexa Fluor® 546 (sc-53955 AF546), Alexa Fluor® 594 (sc-53955 AF594) or Alexa Fluor® 647 (sc-53955 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53955 AF680) or Alexa Fluor® 790 (sc-53955 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

α -synuclein (2B2D1) is recommended for detection of α -synuclein of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

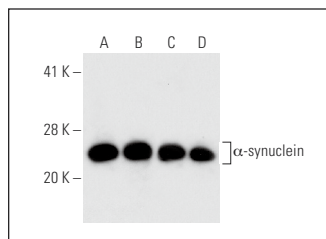
Molecular Weight of α -synuclein: 19 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, IMR-32 cell lysate: sc-2409 or T98G cell lysate: sc-2294.

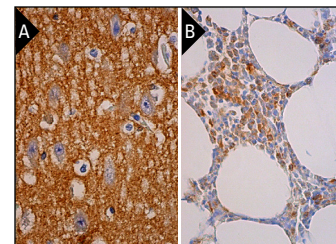
STORAGE

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

DATA



α -synuclein (2B2D1): sc-53955. Western blot analysis of α -synuclein expression in SH-SY5Y (A), SK-N-SH (B), T98G (C) and IMR-32 (D) whole cell lysates.



α -synuclein (2B2D1): sc-53955. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing neuropil staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing cytoplasmic staining of subset of hematopoietic cells (B).

SELECT PRODUCT CITATIONS

- Qiao, H., et al. 2015. Elevated neuronal α -synuclein promotes microglia activation after spinal cord ischemic/reperfused injury. *Neuroreport* 26: 656-661.
- Merle, D.A., et al. 2019. Increased aggregation tendency of α -synuclein in a fully disordered protein complex. *J. Mol. Biol.* 431: 2581-2598.
- Ding, J., et al. 2020. The effect of α -synuclein and Tau in methamphetamine induced neurotoxicity *in vivo* and *in vitro*. *Toxicol. Lett.* 319: 213-224.
- Zhang, Z., et al. 2021. Hydrogen-saturated saline mediated neuroprotection through autophagy via PI3K/AKT/mTOR pathway in early and medium stages of rotenone-induced Parkinson's disease rats. *Brain Res. Bull.* 172: 1-13.
- Roy, T., et al. 2022. Rotenone induced neurodegeneration is mediated via cytoskeleton degradation and necroptosis. *Biochim. Biophys. Acta Mol. Cell Res.* 1870: 119417.
- Çalış, İ., et al. 2023. Comparative phytochemical studies on the roots of *Polygala azizsancarii* and *P. peshmenii* and neuroprotective activities of the two xanthones. *Phytochemistry* 210: 113650.
- Shirgadwar, S.M., et al. 2023. Neuroprotective effect of phloretin in rotenone-induced mice model of Parkinson's disease: modulating mTOR-NRF2-p62 mediated autophagy-oxidative stress crosstalk. *J. Alzheimers Dis.* 94: S109-S124.
- Pinjala, P., et al. 2024. Dimethyl fumarate exerts a neuroprotective effect by enhancing mitophagy via the NRF2/BNIP3/PINK1 axis in the MPP⁺ iodide-induced Parkinson's disease mice model. *J. Alzheimers Dis. Rep.* 8: 329-344.

RESEARCH USE

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