

nitrated α/β -synuclein (4H317): sc-71702

BACKGROUND

The synucleins, including α -synuclein (also designated NACP for nonamyloid component precursor), β -synuclein (also designated PNP 14 for phosphonoprotein 14) and γ -synuclein (also designated persyn or BCSG1 for breast cancer-specific gene 1) are presynaptic proteins abundant in neurons. Synucleins are predominantly expressed in the brain and are speculated to be involved in synaptic regulation and neuronal plasticity. α -synuclein, identified as a component of Alzheimer's disease amyloid plaques, is localized to neuronal cell bodies and synapses. Coordinate expression of α -synuclein and β -synuclein may be important during hematopoietic cell differentiation. A mutant form of α -synuclein is found in patients with early onset Parkinson's disease. γ -synuclein is associated with axonal pathology in Parkinson's disease.

REFERENCES

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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 β component of Alzheimer's disease amyloid is a presynaptic protein of the central nervous system. *Neuron* 14: 467-475.
4. Hashimoto, M., et al. 1997. NACP, a synaptic protein involved in Alzheimer's disease, is differentially regulated during megakaryocyte differentiation. *Biochem. Biophys. Res. Commun.* 237: 611-616.
5. Polymeropoulos, M.H., et al. 1997. Mutation in the α -synuclein gene identified in families with Parkinson's disease. *Science* 276: 2045-2047.
6. da Costa, C.A., et al. 2003. β -synuclein displays an antiapoptotic p53-dependent phenotype and protects neurons from 6-hydroxydopamine-induced caspase 3 activation: cross-talk with α -synuclein and implication for Parkinson's disease. *J. Biol. Chem.* 278: 37330-37335.
7. Wilson, C.A., et al. 2004. Degradative organelles containing mislocalized α and β -synuclein proliferate in Presenilin 1 null neurons. *J. Cell Biol.* 165: 335-346.
8. Lee, D., et al. 2004. β -synuclein exhibits chaperone activity more efficiently than α -synuclein. *FEBS Lett.* 576: 256-260.

CHROMOSOMAL LOCATION

Genetic locus: SNCA (human) mapping to 4q22.1, SNCB (human) mapping to 5q35.2.

SOURCE

nitrate α/β -synuclein (4H317) is a mouse monoclonal antibody raised against recombinant human α -synuclein nitrated *in vitro*.

PRODUCT

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

APPLICATIONS

nitrate α/β -synuclein (4H317) is recommended for detection of nitrated α -synuclein and nitrated β -synuclein of 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/β -synuclein siRNA (h): sc-43589, α/β -synuclein shRNA Plasmid (h): sc-43589-SH and α/β -synuclein shRNA (h) Lentiviral Particles: sc-43589-V.

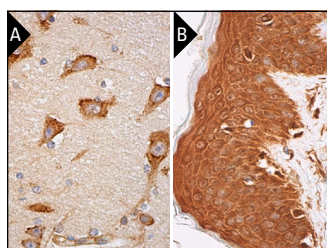
Molecular Weight of nitrated α/β -synuclein: 19 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® 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 κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



nitrate α/β -synuclein (4H317): sc-71702. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic and nuclear staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (B).

RESEARCH USE

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

STORAGE

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