

β -synuclein (8): sc-136452

BACKGROUND

The synucleins, including α -synuclein (also designated NACP for nonamyloid component precursor), β -synuclein (also designated PNP 14 for phospho-neuroprotein 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

1. Ueda, K., et al. 1993. Molecular cloning of cDNA encoding an unrecognized component of amyloid in Alzheimer 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.

CHROMOSOMAL LOCATION

Genetic locus: SNCB (human) mapping to 5q35.2; Sncb (mouse) mapping to 13 B1.

SOURCE

β -synuclein (8) is a mouse monoclonal antibody raised against amino acids 107-118 of β -synuclein of rat 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.

In addition, β -synuclein (8) is available conjugated to biotin (sc-136452 B), 200 μ g/ml, for WB, IHC(P) and ELISA.

APPLICATIONS

β -synuclein (8) is recommended for detection of β -synuclein of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for β -synuclein siRNA (h): sc-36594, β -synuclein siRNA (m): sc-36595, β -synuclein shRNA Plasmid (h): sc-36594-SH, β -synuclein shRNA Plasmid (m): sc-36595-SH, β -synuclein shRNA (h) Lentiviral Particles: sc-36594-V and β -synuclein shRNA (m) Lentiviral Particles: sc-36595-V.

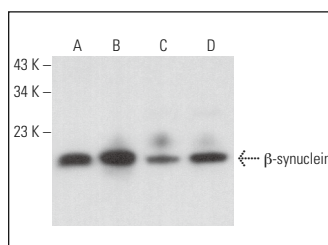
Molecular Weight of β -synuclein: 19 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or rat cerebellum extract: sc-2398.

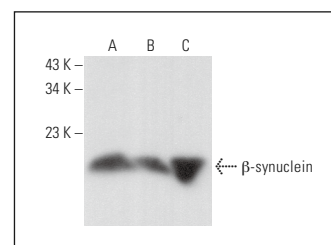
RECOMMENDED SUPPORT REAGENTS

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).

DATA



β -synuclein (8): sc-136452. Western blot analysis of β -synuclein expression in mouse cerebellum (A), human cerebellum (B), human brain (C) and human cerebral cortex (D) tissue extracts.



β -synuclein (8): sc-136452. Western blot analysis of β -synuclein expression in rat brain (A), rat cerebellum (B) and mouse brain (C) tissue extracts.

SELECT PRODUCT CITATIONS

1. Vaikath, N.N., et al. 2015. Generation and characterization of novel conformation-specific monoclonal antibodies for α -synuclein pathology. *Neurobiol. Dis.* 79: 81-99.
2. Majbour, N.K., et al. 2016. Oligomeric and phosphorylated α -synuclein as potential CSF biomarkers for Parkinson's disease. *Mol. Neurodegener.* 11: 7.
3. Toni, M., et al. 2016. Synuclein expression in the lizard *Anolis carolinensis*. *J. Comp. Physiol. A Neuroethol. Sens. Neural Behav. Physiol.* 202: 577-595.
4. Fares, M.B., et al. 2016. Induction of *de novo* α -synuclein fibrillization in a neuronal model for Parkinson's disease. *Proc. Natl. Acad. Sci. USA* 113: E912-E921.
5. Guan, H., et al. 2017. Mitochondrial ferritin protects SH-SY5Y cells against H₂O₂-induced oxidative stress and modulates α -synuclein expression. *Exp. Neurol.* 291: 51-61.
6. Carnazza, K.E., et al. 2022. Synaptic vesicle binding of α -synuclein is modulated by β - and γ -synucleins. *Cell Rep.* 39: 110675.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.