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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; Snbc (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.

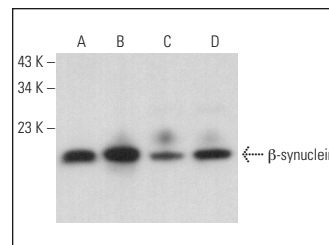
Molecular Weight of β -synuclein: 19 kDa.

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

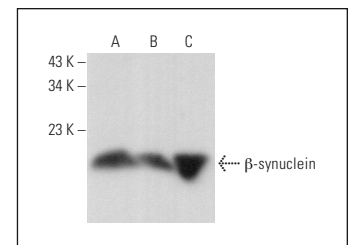
RECOMMENDED SUPPORT REAGENTS

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.