

# β-synuclein (B-22): sc-135677

## 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.
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. Comm.* 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.
9. Snyder, H., et al. 2005. β-synuclein reduces proteasomal inhibition by α-synuclein but not γ-synuclein. *J. Biol. Chem.* 280: 7562-7569.

## CHROMOSOMAL LOCATION

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

## STORAGE

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

## SOURCE

β-synuclein (B-22) is a Protein A purified rabbit polyclonal antibody raised against recombinant β-synuclein protein of human origin.

## PRODUCT

Each vial contains IgG in 100 μl of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

β-synuclein (B-22) is recommended for detection of β-synuclein of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and immunoprecipitation [1-2 μl per 100-500 μg of total protein (1 ml of cell lysate)]; may cross-react with α-synuclein and γ-synuclein.

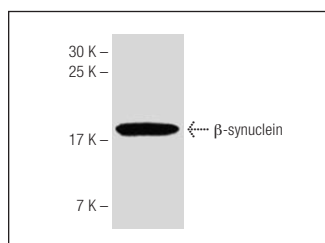
Molecular Weight of β-synuclein: 19 kDa.

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

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 (B-22): sc-135677. Western blot analysis of β-synuclein expression in mouse brain tissue extract.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.