

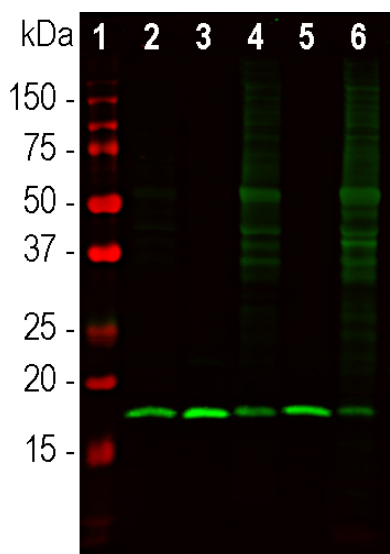
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HGNC Name: SNCB
UniProt: Q16143
RRID: AB_2860578
Immunogen: Full length human recombinant β-Synuclein protein expressed in and purified from E. Coli
Format: Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN₃
Storage: Store at 4°C for short term, for longer term store at -20°C
Recommended dilutions:
 WB: 1:1,000-2,000. IF/ICC 1:1,000-2,000. IHC 1:2,000.

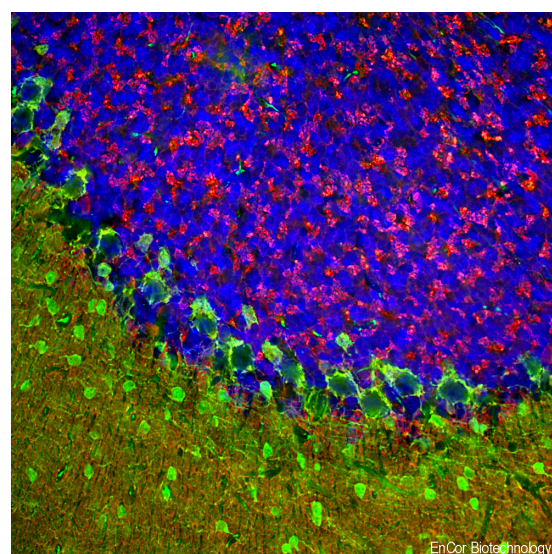
References:

1. Maroteaux L, Campanelli JT, Scheller RH. Synuclein: a neuron-specific protein localized to the nucleus and presynaptic nerve terminal. *J. Neurosci.* 8:2804-15 (1988).
2. Lavedan C. The Synuclein Family. *Genome Research* 8:871-80 (1998).
3. Polymeropoulos, MH et al. Mutation in the alpha-synuclein gene identified in families with Parkinson's disease. *Science* 276:2045-7 (1997).
4. Kruger, R et al. Ala30-to-Pro mutation in the gene encoding alpha-synuclein in Parkinson's disease. *Nature Genet.* 18:106-8 (1998).
5. Chartier-Harlin, M-C. et al. Alpha-synuclein locus duplication as a cause of familial Parkinson's disease. *Lancet* 364:1167-9 (2004).
6. Ji H. et al. Identification of a breast cancer-specific gene, BCSG1, by direct differential cDNA sequencing. *Cancer Res.* 57:759-64 (1997).
7. Greten-Harrison, B. et al. αβγ-Synuclein triple knockout mice reveal age-dependent neuronal dysfunction. *PNAS* 107:19573-8 (2001).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC	Rabbit		~15kDa	Hu, Rt, Ms, Co, Pi



Western blot analysis of different tissue lysates using rabbit pAb to β-synuclein, RPCA-SNCB, dilution 1:1,000 in green: [1] protein standard (red), [2] mouse cerebellum [3] mouse hippocampus, [4] rat cerebellum, [5] rat hippocampus, and [6] cow cerebellum. Strong band at about 17kDa corresponds to the β-synuclein protein.



Immunofluorescent analysis of rat cerebellum section stained with rabbit pAb to β-synuclein, RPCA-SNCB, dilution 1:1,000 in red, and costained with chicken pAb to parvalbumin, CPCA-Pvalb, dilution 1:5,000 in green. The blue is Hoechst staining of nuclear DNA. Following transcardial perfusion of rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45μm, and free-floating sections were stained with above antibodies. The β-synuclein antibody detects protein concentrated in synaptic regions, and parvalbumin antibody labels the perikarya and dendrites of Purkinje cells, and interneurons in the molecular layer of the cerebellum.

Background:

β-synuclein is a member of the synuclein protein family, the other two members being α and γ-synuclein, each protein being coded for by a distinct but related gene. α-synuclein was originally isolated as a major synaptic vesicle associated protein from the electric organ of the fish *Torpedo* (1), and direct homologues of α-synuclein are found in all vertebrates. Later work connected α-synuclein expression with several human brain pathologies, so that it is a major component of the Lewy bodies of Parkinson's disease (2-5). β-synuclein was isolated as a component of normal and diseased human brain as a protein clearly related to but distinct from α-synuclein (6). The human β-synuclein molecule is 134 amino acids in size compared to 140 amino acids for α-synuclein, and the N-terminal halves of the two molecules are virtually identical while the C-terminal regions is more variable. As a result we made our new β-synuclein antibodies to this region. Like α-synuclein, β-synuclein is heavily concentrated in the brain in presynaptic regions. A third synuclein, γ-synuclein was originally identified as breast cancer specific gene 1, (BCSG1), but is also heavily expressed in brain and also has a similar N-terminal sequence (7). The three synucleins appear to have overlapping functions so genetic deletion of all three in mice is required to obtain serious neurological deficits (7).

The RPCA-SNCB antibody was made against full length human recombinant β-synuclein protein expressed in and purified from E.Coli. This antibody recognizes full length human and rodent β-synuclein specifically both in western blots and in immunocytochemical experiments. EnCor also supplies a high quality monoclonal antibody to β-synuclein [MCA-6A10](#), and high quality antibodies to α-synuclein [MCA-2A7](#) and [CPCA-SCNA](#).

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Abbreviation Key:

mAb—Monoclonal Antibody **pAb**—Polyclonal Antibody **WB**—Western Blot **IF**—Immunofluorescence **ICC**—Immunocytochemistry
IHC—Immunohistochemistry **E**—ELISA **Hu**—Human **Mo**—Monkey **Do**—Dog **Rt**—Rat **Ms**—Mouse **Co**—Cow **Pi**—Pig **Ho**—Horse **Ch**—Chicken
Dr—*D. rerio* **Dm**—*D. melanogaster* **Sm**—*S. mutans* **Ce**—*C. elegans* **Sc**—*S. cerevisiae* **Sa**—*S. aureus* **Ec**—*E. coli*.