

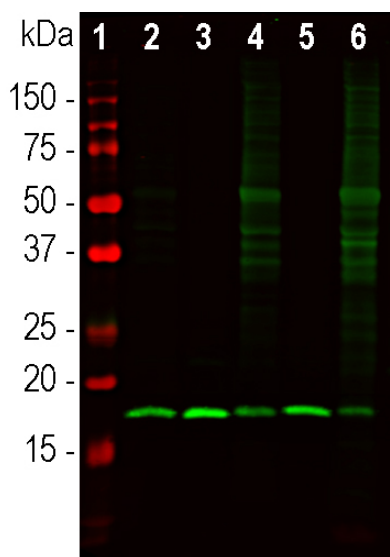
**Ordering Information**  
 Web [www.encorbio.com](http://www.encorbio.com)  
 Email [admin@encorbio.com](mailto:admin@encorbio.com)  
 Phone 352-372-7022  
 Fax 352-372-7066

**HGNC Name:** SNCB  
**UniProt:** Q16143  
**RRID:** AB\_2860578  
**Immunogen:** Full length human recombinant  $\beta$ -Synuclein protein expressed in and purified from *E. Coli*  
**Format:** Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
**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.

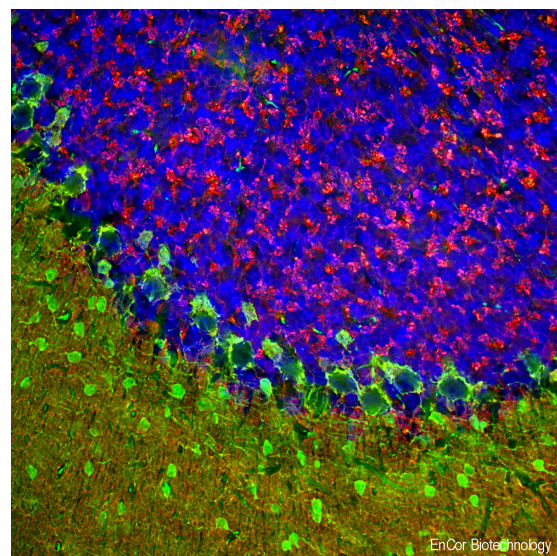
### References:

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. Gretchen-Harrison, B. et al.  $\alpha\beta\gamma$ -Synuclein triple knockout mice reveal age-dependent neuronal dysfunction. *PNAS* 107:19573-8 (2010).

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  $\beta$ -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  $\beta$ -synuclein protein.



Immunofluorescent analysis of rat cerebellum section stained with rabbit pAb to  $\beta$ -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 45 $\mu$ M, and free-floating sections were stained with above antibodies. The  $\beta$ -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:

$\beta$ -synuclein is a member of the synuclein protein family, the other two members being  $\alpha$  and  $\gamma$ -synuclein, each protein being coded for by a distinct but related gene.  $\alpha$ -synuclein was originally isolated as a major synaptic vesicle associated protein from the electric organ of the fish *Torpedo* (1), and direct homologues of  $\alpha$ -synuclein are found in all vertebrates. Later work connected  $\alpha$ -synuclein expression with several human brain pathologies, so that it is a major component of the Lewy bodies of Parkinson's disease (2-5).  $\beta$ -synuclein was isolated as a component of normal and diseased human brain as a protein clearly related to but distinct from  $\alpha$ -synuclein (6). The human  $\beta$ -synuclein molecule is 134 amino acids in size compared to 140 amino acids for  $\alpha$ -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  $\beta$ -synuclein antibodies to this region. Like  $\alpha$ -synuclein,  $\beta$ -synuclein is heavily concentrated in the brain in presynaptic regions. A third synuclein,  $\gamma$ -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  $\beta$ -synuclein protein expressed in and purified from *E. coli*. This antibody recognizes full length human and rodent  $\beta$ -synuclein specifically both in western blots and in immunocytochemical experiments. EnCor also supplies a high quality monoclonal antibody to  $\beta$ -synuclein MCA-6A10, and high quality antibodies to  $\alpha$ -synuclein MCA-2A7 and CPCA-SCNA.

FOR RESEARCH USE ONLY. NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE.

### 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.