

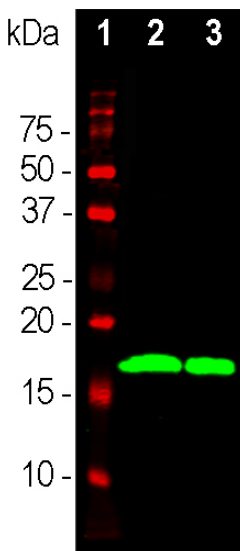
**Ordering Information**  
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**HGNC Name:** SNCA  
**UniProt:** P37840  
**RRID:** AB\_2572383  
**Immunogen:** Full length human recombinant protein expressed in and purified from *E. coli*  
**Format:** Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN<sub>3</sub>  
**Storage:** Store at 4°C for short term, for longer term at -20°C  
**Recommended dilutions:**  
 WB:1:1,000 IF/ICC: 1:1,000

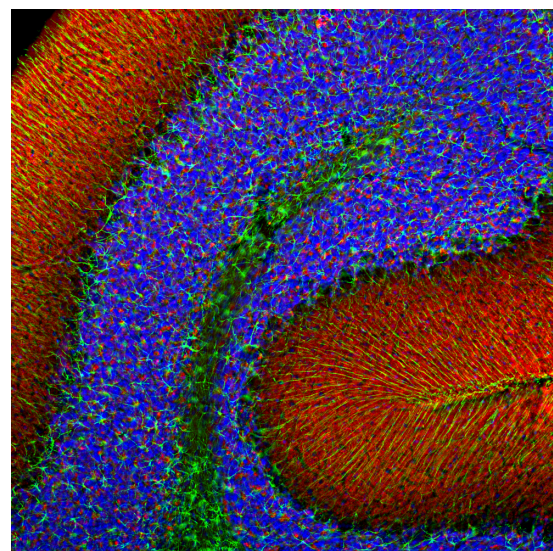
### References:

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. Singleton, AB et al. Alpha-synuclein locus triplication causes Parkinson's disease. *Science* 302:841 (2003).
7. Ibanez, P. et al. Causal relation between alpha-synuclein gene duplication and familial Parkinson's disease. *Lancet* 364:1169-71 (2004).
8. Tinsley RD, et al. Sensitive and specific detection of  $\alpha$ -synuclein in human plasma. *J. Neurosci. Res.* 88:2693-700 (2010).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Mouse	IgG1 heavy, $\kappa$ light	~15kDa	Hu, Rt, Ms, Co, Pi



Western blot analysis of different tissue lysates using mAb to  $\alpha$ -synuclein MCA-2A7, dilution 1:1,000 in green. [1] protein standard in red, [2] whole rat brain lysate, [3] rat spinal cord lysate. The strong band at about 15kDa corresponds to  $\alpha$ -synuclein protein.



Immunofluorescent analysis of rat cerebellum section stained with mouse mAb to  $\alpha$ -synuclein MCA-2A7, dilution 1:1,000, in red, and costained with rabbit pAb to GFAP RPCA-GFAP 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  $\alpha$ -synuclein protein is concentrated in synaptic regions, while the GFAP antibody stains the filamentous cytoskeleton of Bergmann glia and astrocytic cells.

### Background:

$\alpha$ -synuclein is a member of the synuclein protein family, the other two members being  $\beta$  and  $\gamma$ -synuclein, each protein is 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, it is a major component of the Lewy bodies of Parkinson's disease (2). Point mutations of  $\alpha$ -synuclein proved to be causative of some forms of familial Parkinson's disease (3-5). One genetic cause of early onset Parkinson's disease is duplication or triplication of one of the  $\alpha$ -synuclein genes leading to excess production of the protein (6,7).  $\alpha$ -synuclein is also found in the Lewy bodies of patients with diffuse Lewy body disease and inclusions in glial cells in the brains of patients with multiple system atrophy and amyotrophic lateral sclerosis.  $\alpha$ -synuclein is normally heavily expressed in brain and appears to be localized primarily to presynaptic regions, though not with a typical synaptic vesicle distribution pattern.

The MCA-2A7 antibody was made against full length recombinant human  $\alpha$ -synuclein, EnCor product [PROT-r-SNCA](#), and recognizes full length human and rodent  $\alpha$ -synuclein specifically both in western blots and in immunocytochemical experiments. The epitope for MCA-2A7 is in the region 61-95 which correspond to the "Non-amyloid beta component of Alzheimer's disease amyloid" (NAC, see above, also see [here](#)). The antibody also shows no cross-reactivity with either  $\beta$  or  $\gamma$ -synuclein, see data under the "Additional Info" tag. As expected, MCA-2A7 will also bind human  $\alpha$ -synuclein containing either the A30P or the A53T Parkinson's associated mutations, see data under the "additional info" tab. The antibody has also been used as a capture reagent capable of detecting endogenous  $\alpha$ -synuclein in human plasma (8). We also supply a chicken polyclonal antibody made against the same immunogen, [CPCA-SNCA](#).

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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*.