Recombinant human α-synuclein

Prot-r-SNCA

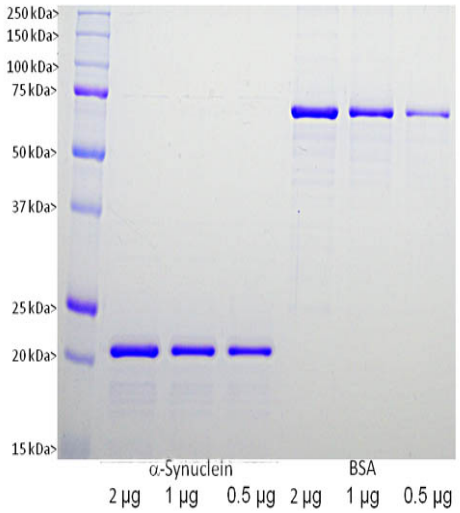
Applications	Host	Molecular Wt.	HGNC	UniPort
Elisa and gel standard, immunogen	E. coli		SNCA	P37840

Ordering Information
Web *www.encorbio.com*
Email *admin@encorbio.com*
Phone *352-372-7022*
Fax *352-372-7066*

HGNC Name: *SNCA*
RRID: *NA*
Format: *1mg/mL in 6M Urea*
Storage: *Stable at 4°C for one year, for longer term store at -20°C*
UniProt: *P37840*

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).



Coomassie Brilliant Blue stained SDS-PAGE gel of recombinant α-synuclein expressed in and purified from *E. coli*. Different loadings of pure α-synuclein are in the three indicated lanes on the left, while similar amounts of BSA are in the right three lanes. Protein molecular weight standards are in the first lane and apparent molecular weights are as indicated.

Background:

α-synuclein is a member of the synuclein protein family, the other two members being β and γ-synuclein, each protein is 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, it is a major component of the Lewy bodies of Parkinson's disease (2). Point mutations of α-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 α-synuclein genes leading to excess production of the protein (6,7). α-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. α-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.

A codon optimized cDNA encoding full length human α-synuclein was designed and inserted into the pET30a (+) expression vector. The vector adds an N-terminal His-tag to the human sequence which increases the molecular weight by about 5kDa. The construct was expressed by standard methods in *E. coli* and purified using a Nickel column in 6M urea. The protein is supplied in 6M urea in phosphate buffer. The lane on the far left contains protein standards of the indicated molecular size. In the next lanes 2µg, 1µg and 0.5µg of the recombinant α-synuclein were run as indicated and 1µg and 0.5µg of BSA were in the two right lanes.

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.