

Product Specification Sheet

**Synuclein Recombinant protein**

**Cat. # SYN-A30P-R**

Human Alpha SYN Recombinant protein

**SIZE:** 50 ug

**FORM:** Soln

Lyophilized

Parkinson's disease (**PD**) is a common neurodegenerative disorder with a lifetime incidence of approximately 2 percent; the clinical manifestations of this neurodegenerative disorder include resting tremor, muscular rigidity, bradykinesia, and postural instability. A relatively specific pathological feature accompanying the neuronal degeneration is an intracytoplasmic inclusion body, known as the **Lewy body**. A mutation was identified in the  $\alpha$ -**synuclein** gene, which codes for a presynaptic protein thought to be involved in neuronal plasticity, this mutation may cause a conformational change that renders  $\alpha$ -synuclein more prone to self aggregation and deposition in Lewy bodies, which finally leads to oxidative stress and misfolding of  $\alpha$ -synuclein.

Parkin gene, mutations in this gene are reported in early autosomal-recessive form of PD, however these mutations do not degenerate **Lewy bodies**. The Parkin gene product (**Parkin**) is involved in protein degradation as a ubiquitin protein ligase, the known substrates of Parkin include Pael-R (Parkin-associated endothelin receptor-like receptor), Ubiquitination of Pael-R by Parkin leads to its degradation in the proteasome, however failure to ubiquitinate it leads to death of neuron.

The synuclein exists in 3 isoform  $\alpha$ -**syn** (chr4 **4q21**), a 140aa protein, implicated in pathogenesis of PD and related neurodegenerative disorders, it is mainly expressed in brain specifically in neuronal cell bodies and synapses. The 134 aa  $\beta$ -**syn** (chr5 **5q35**) is homologous to 14 kDa bovine phosphoneuroprotein 14; SCNB has been shown to be highly expressed in the substantia nigra of the brain. Recently a new isoform termed  $\gamma$ -**synuclein** (SNCG) or breast cancer gene 1 (BCG1) has been cloned (human 127 aa (chr10 **10q23**), rat/mouse 123 aa). Higher levels of expression of SNCG have been reported in advanced breast carcinomas. All three synuclein show ~40% identity.

**Source of Antigen**

Human Alpha synuclein recombinant protein, a point mutant (A30P) of the alpha synuclein gene that has been linked to autosomal dominant early onset Parkinson's disease. Purity: >95% by SDS-PAGE (Mol.wt 14.5kD). It is provided in 50 mM Sodium Phosphate buffer, 60 mM NaCl, 17 mM citric acid, pH 6.2 in liquid (100 ug/100 ul) or lyophilized. The lyophilized products should be reconstituted (Add 100 ml water or a desired buffer at a given volume and lightly vortex and mix for 15 min at room temp). It can then be used or aliquoted for storage in small aliquots at -70oC or below.

**General References:**

Park, S.M et al 2002, Blood 100, 2506; Kruger .R et al 1998, Nat Genet. 18, 106; Jakes. R et al. 1994, FEBS Lett. 345, 27.

\*This product is for *in vitro* research use only.

Syn-A30P-R

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