ALPHA DIAGNOSTIC INTERNATIONAL

LIFE TECH Life Technologies™ Your Molecular & Cell Technology Partner

Product Specification Sheet

Human Synuclein mutant, Recombinant protein (61-140)

Cat. # SYN-61140-R Recombinant Human Alpha SYN protein (61-140) **SIZE**: 50 ug

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 **α-synuclein** gene, which codes for a presynaptic protein thought to be involved in neuronal plasticity, this mutation may cause a conformational change that renders α-synuclein more prone to self aggregation and deposition in Lewy bodies, which finally leads to oxidative stress and misfolding of α-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 **α-syn (chrm 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 **β-syn (**chrm 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 **γ-synuclein** (SNCG) or breast cancer gene 1 (BCG1) has been cloned (human 127 aa (chrm 10q23), rat/mouse 123 aa). Higher levels of expression of SNCG has been reported in advanced breast carcinomas. All three synuclein show ~40% identity.

Source and Storage

A deletion mutant of α-synuclein (amino acids 61-140)

Human Synuclein 61-140 sequence (81 aa)
MEQVTNVGGAVVTGVTAVAQKTVEGAGSIAAATGFVKKDQL
GKNEEGAPQEGILEDMPVDPDNEAYEMPSEEGYQDYEPEA

Human Alpha synuclein (61-140 aa) with an additional Methionine at the N-terminus was expressed E. coli and purified (>95% by SDS-PAGE, mol. wt 8.4 kda). It is provided in 10mM Tris, pH 7.4, 100 mM NaCl in liquid (50 ug/50 ul; see lot specific cocn on the vial) or lyophilized. The lyophilized products should be reconstituted in water at 1 mg/ml or other desired concn. 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:

Kim. J et al (1997) Mo. Cells 7, 78; Paik, S.R et al (1997) Arch Biochem. Biophys, 344, 325, Jakes. R et al. 1994, FEBS Lett. 345, 27.

Citation of ADI's Antibodies for Synuclein Alpha:

Sudo S et al, 2002, Acta Neuropathologica DOI 10.1007, Motor neuron disease with dementia combined with degeneration of striatonigral and pallidoluysian systems

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

Related material available from ADI

Anti-Presenilins 1, 2; Synuclein alpha and beta, APP, Amyloids, ERAB, Dopamine, dopamine transporter, and Dopamine receptors, Serotonin transporter, etc.

SYN-61140-R 80108A

India Contact:
Life Technologies (India) Pvt. Ltd.
306, Aggarwal City Mall, Opposite M2K Pitampura, Delhi – 110034 (INDIA). Ph: +91-11-42208000, 42208111, 42208222, Mobile: +91-9810521400, Fax: +91-11-42208444
Email: customerservice@lifetechindia.com Website: www.lifetechindia.com