

A53T Mutant Alpha Synuclein Active Protein | A53T active protein

Active Human Recombinant A53T Mutant Alpha Synuclein Protein Preformed Fibrils (Type 1)

CATALOG # AAA27661	HOST E Coli	APPLICATIONS Western Blot, SDS-Page
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PRODUCT SYNONYMS

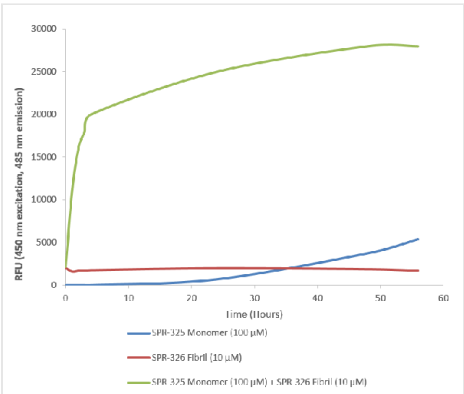
A53T Mutant Alpha Synuclein; Active Human Recombinant A53T Mutant Alpha Synuclein Protein Preformed Fibrils (Type 1); Alpha Synuclein Protein; A53T mutant alpha synuclein; A53T mutated SNCA; A53T Alpha synuclein PFFs; Ala-53-->thr mutant alpha synuclein; Alpha synuclein pre-formed fibrils; Alpha synuclein aggregates; Alpha synuclein protein aggregates; Active Alpha synuclein aggregates; Alpha-synuclein protein; Non-A beta component of AD amyloid protein; Non-A4 component of amyloid precursor protein; NACP protein; SNCA protein; PARK1 protein; Alpha synuclein monomers; SYN protein; Parkinson disease familial 1 Protein; A53T active protein

PRODUCT SPECIFICATIONS

Host	E Coli
Specificity	~14.46 kDa
Purity/Purification	>95% pure using SDS-PAGE analysis. Ion-Exchange Purified
Form/Format	PBS
Concentration	2 mg/mL (varies by lot)
Sequence Length	Full Length
Applicable Applications for A53T active protein	WB (Western Blot), SDS-PAGE, Invitro Assay, Invitro Assay
Species	Human
Nature	Recombinant
Cellular Localization	Cytoplasm; Membrane; Nucleus
Protein Length	Full Length
Biological Activity	Endogenous alpha-synuclein phosphorylation. 100 uM alpha synuclein protein monomerseeded with 10 nM alpha synuclein protein aggregatein 25 uM Thioflavin T (PBS pH 7.4, 100 ul reaction volume) generated a fluorescence intensity of 13,000 Relative Fluorescence Units after incubation at 37°C with shaking at 600 rpm for 24 hours. Fluorescence was measured by excitation at 450 nm and emission at 485 nm on a Molecular Devices Gemini XPS microplate reader.
Research Areas	Alzheimer's Disease, Neurodegeneration, Neuroscience, Parkinson's Disease, Synuclein, Tangles & Tau
Cellular Localization	Cytoplasm, Membrane, Nucleus
Function	Alpha-Synuclein (SNCA) is expressed predominantly in the brain, where it is concentrated in presynaptic nerve terminals (1). Alpha-synuclein is highly expressed in the mitochondria of the olfactory bulb, hippocampus, striatum and thalamus (2). Functionally, it has been shown to significantly interact with tubulin (3), and may serve as a potential microtubule-associated protein. It has also been found to be essential for normal development of the cognitive functions; inactivation may lead to impaired spatial learning and working memory (4). SNCA fibrillar aggregates represent the major non A-beta component of Alzheimers disease amyloid plaque, and a major component of Lewy body inclusions, and Parkinson's disease. Parkinson's disease (PD) is a common neurodegenerative disorder characterized by the progressive accumulation in selected neurons of protein inclusions containing alpha-synuclein and ubiquitin (5, 6). The A53T mutation is a missense point mutation where alanine is replaced by threonine at the 53rd amino acid. This mutation has been linked to early-onset Parkinson's Disease (7) and increased rates of alpha synuclein fibrillization (8).

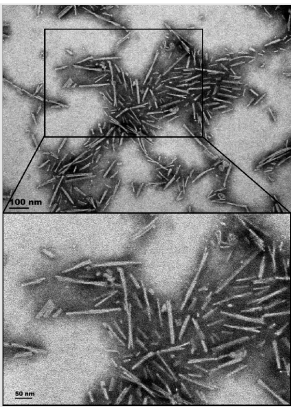
Dry Ice Note	The product may be shipped with dry ice, and an additional fee may be added to your shipping cost.
Preparation and Storage	Store at -80°C for 1 year. Avoid freeze/thaw cycle. Ships on Dry Ice.

IMAGES



Application Data

Thioflavin T is a fluorescent dye that binds to beta sheet-rich structures such as those in alpha synuclein fibrils. Upon binding, the emission spectrum of the dye experiences a red-shift and increased fluorescence intensity. Thioflavin T emission curves show a limited increase in fluorescence (correlated to alpha synuclein aggregation) over time in A53T alpha synuclein monomers . A much greater increase in fluorescence is seen when 100 uM monomer is combined with 10 nM of fibrils (AAA27661) as the fibrils seed the formation of new fibrils from the pool of active monomers. Thioflavin T ex = 450 nm, em = 485 nm.



Application Data

TEM of A53T alpha synuclein preformed fibrils (AAA27661)

ADDITIONAL INFORMATION

Product Categories/Family for A53T active protein	Neuroscience; Neurodegeneration; Alzheimer's Disease; Tangles & Tau; Neuroscience; Neurodegeneration; Parkinson's Disease; Synuclein
References	1. "Genetics Home Reference: SNCA". US National Library of Medicine. (2013). 2. Zhang L., et al. (2008) Brain Res. 1244: 40-52. 3. Alim M.A., et al. (2002) J Biol Chem. 277(3): 2112-2117. 4. Kokhan V.S., Afanasyeva M.A., Van'kin G. (2012) Behav. Brain. Res. 231(1): 226-230. 5. Spillantini M.G., et al. (1997) Nature. 388(6645): 839-840. 6. Mezey E., et al. (1998) Nat Med. 4(7): 755-757. 7. Polymeropoulos, M. H. (1998). Science. 276(5321), 2045-2047. 8. Conway, K.E., et al. (1998). Nat Med. 4(11):1318-20.

NCBI AND UNIPROT INFORMATION

NCBI GI #	4507109
NCBI GeneID	6622
NCBI Accession #	NP_000336.1
NCBI GenBank Nucleotide #	NP_000336.1
UniProt Accession #	P37840 ; P37840
NCBI Official Full Name	alpha-synuclein isoform NACP140
NCBI Official Synonym Full Names	synuclein alpha
NCBI Official Symbol	SNCA
NCBI Official Synonym Symbols	PD1; NACP; PARK1; PARK4
NCBI Protein Information	alpha-synuclein

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

