

Alpha Synuclein Protein

Active Human Recombinant A53T Mutant Alpha Synuclein Protein Monomer
Catalog No. SPR-325



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Product Name

Alpha Synuclein Protein

Description

Active Human Recombinant A53T Mutant Alpha Synuclein Protein Monomer

Applications

WB, SDS-PAGE, In vivo assay, In vitro assay

Concentration

Lot/batch specific. See included datasheet.

Conjugates

No tag

Nature

Recombinant

Species

Human

Expression System

E. coli

Amino Acid Sequence

MDVFMKGLSK AKEGVVAAA E KTKQGVAEAA GKTKEGVLYV GSKTKEGVVH GVTTVAEGTK EQVTNVGGAV VTGVTA
VAQK TVEGAGSIAA ATGFVKKDQL GKNEEGAPQE GILEDMPVDP DNEAYEMPSE EGYQDYEP EA

Purity

>95%

Protein Length

Full Length

Biological Activity

100 μ M A53T alpha synuclein protein monomer (SPR-325) seeded with 10 nM A53T alpha synuclein protein PFF (SPR-326) in 25 μ M Thioflavin T (PBS pH 7.4, 100 μ l reaction volume) generated a fluorescence intensity of 28 000 Relative Fluorescence Units after incubation at 37°C with shaking at 600 rpm for 56 hours. Fluorescence was measured by excitation at 450 nm and emission at 485 nm on a Molecular Devices Gemini XPS microplate reader.

Field Of Use

Not for use in humans. Not for use in diagnostics or therapeutics. For in vitro research use only.

Properties

Storage Buffer

PBS pH 7.4

Storage Temperature

-80°C

Shipping Temperature

Dry Ice. Shipping note: Product will be shipped separately from other products purchased in the same order.

Purification

Ion-exchange Purified

Specificity

~14.46 kDa

Cite This Product

Human Recombinant A53T Alpha Synuclein Protein Monomer (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-325)

Certificate Of Analysis

Certified >95% pure using SDS-PAGE analysis.

Biological Description

Alternative Names

A53T mutant alpha synuclein, A53T mutated SNCA, A53T Alpha synuclein monomer, Ala53thr mutant alpha synuclein, Active Alpha synuclein protein, Alpha-synuclein protein, Non-A beta component of AD amyloid protein, Non-A4 component of amyloid precursor protein, NACP protein, SNCA protein, NACP protein, PARK1 protein, Alpha synuclein monomers, SYN protein, Parkinson disease familial 1 Protein

Research Areas

Alzheimer's Disease, Neurodegeneration, Neuroscience, Parkinson's Disease, Synuclein, Tangles & Tau

Cellular Localization

Cytoplasm, Membrane, Nucleus

Accession Number

NP_000336.1

Gene ID

6622

Swiss Prot

P37840

Scientific Background

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 Alzheimer's 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). +

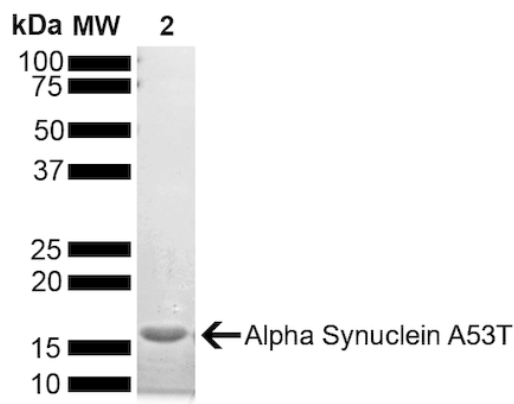
References

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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.

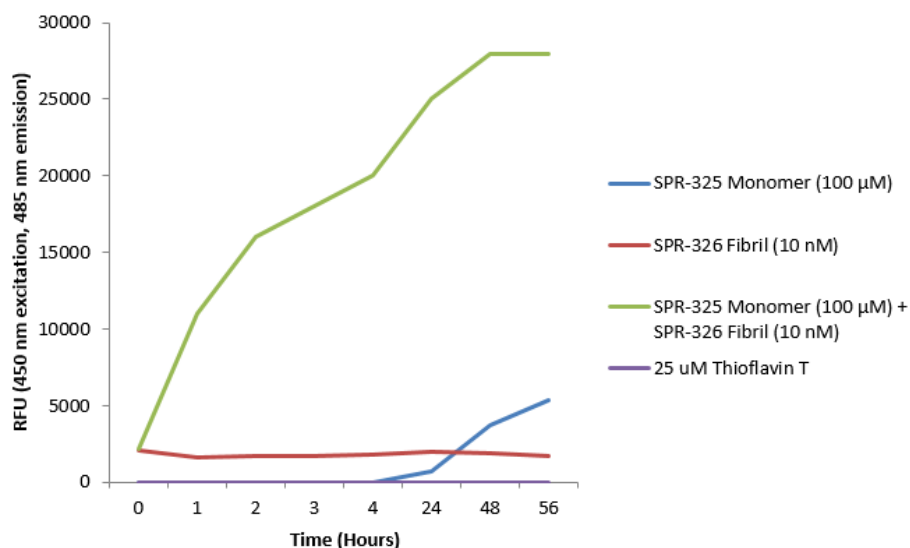
7. Polymeropoulos, M. H. (1998). *Science*. 276(5321), 2045–2047

8. Conway, K.E., et al. (1998). *Nat Med*. 4(11):1318-20

Product Images



SDS-PAGE of ~14 kDa A53T Alpha Synuclein Monomer (SPR-325)



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 (SPR-325). A much greater increase in fluorescence is seen when 100 μ M monomer (SPR-325) is combined with 10 nM of fibrils (SPR-326) as the fibrils seed the formation of new fibrils from the pool of active monomers. Thioflavin T $\text{ex} = 450 \text{ nm}$, $\text{em} = 485 \text{ nm}$.