Datasheet for ABIN6952303

SNCA Protein (Ala53Thr-Mutant)

6 Images

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Overview

Quantity:	100 µg
Target:	SNCA
Protein Characteristics:	Ala53Thr-Mutant
Origin:	Human
Source:	Escherichia coli (E. coli)
Protein Type:	Recombinant
Biological Activity:	Active
Application:	SDS-PAGE (SDS), Western Blotting (WB), In vitro Assay (in vitro), In vivo Studies (in vivo)

Product Details

Sequence:	MDVFMKGLSK AKEGVVAAAE KTKQGVAEAA GKTKEGVLYV GSKTKEGVVH GVTTVAEKTK EQVTNVGGAV VTGVTAVAQK TVEGAGSIAA ATGFVKKDQL GKNEEGAPQE GILEDMPVDP DNEAYEMPSE EGYQDYEPEA
Specificity:	~14.46 kDa
Characteristics:	Active Human Recombinant A53T Mutant Alpha Synuclein Protein Preformed Fibrils (Type 1)
Purification:	Ion-exchange Purified
Biological Activity Comment:	100 µM A53T alpha synuclein protein monomer (SPR-325) seeded with 10 nM A53T alpha synuclein protein PFF (SPR-326) in 25 µM Thioflavin T (PBS pH 7.4, 100 µl 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.

Target Details

Target:	SNCA
Alternative Name:	Alpha Synuclein (SNCA Products)
Background:	Alpha-Synuclein (SNCA) is expressed predominantly in the brain, where it is concentrated in presynaptic nerve terminals. Alpha-synuclein is highly expressed in the mitochondria of the olfactory bulb, hippocampus, striatum and thalamus. Functionally, it has been shown to significantly interact with tubulin, 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. 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. 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 and increased rates of alpha synuclein fibrillization.
Gene ID:	6622
NCBI Accession:	NP_000336
Pathways:	Synaptic Membrane, Regulation of G-Protein Coupled Receptor Protein Signaling, Positive Regulation of Endopeptidase Activity, Regulation of Carbohydrate Metabolic Process, Platelet-derived growth Factor Receptor Signaling, Negative Regulation of Transporter Activity, Regulation of long-term Neuronal Synaptic Plasticity

Application Details

Comment:	Certified >95% pure using SDS-PAGE analysis.
Restrictions:	For Research Use only

Handling

Concentration:	Lot specific
Buffer:	PBS pH 7.4
Storage:	-80 °C

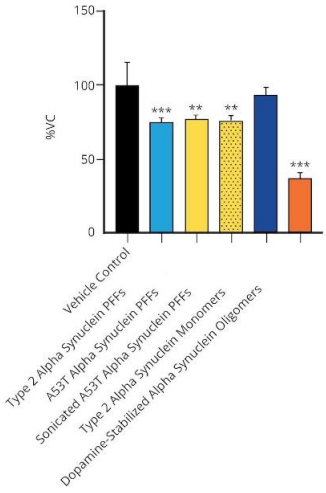

Image 1. Evaluation of a-syn toxicity on primary mouse cortical neurons. Mitochondrial dehydrogenase activity reduces yellow MTT to dark blue formazan crystals, a reaction catalyzed in living cells. Cell viability was assessed with an MTT assay and displayed as % of vehicle control (VC). Data are presented as bar graphs and standard deviation. For statistical analysis One-way ANOVA followed by Bonferroni post-hoc test (vs VC) was used. ** p<0.01, *** p<0.001. Treatment with A53T alpha synuclein PFFs (sonicated and unsonicated) reduced cell viability (p<0.01). Data courtesy of QPS.

Immunofluorescence

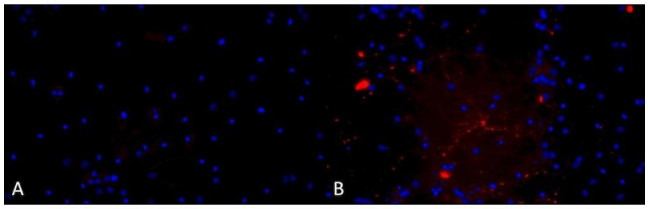

Image 2. Primary rat hippocampal neurons show lewy body inclusion formation when treated with A53T mutant Alpha Synuclein Protein Pre-formed Fibrils (ABIN6952303, ABIN6952304 and ABIN6952305) (B) but not when treated with a media control (A). Tissue: Primary hippocampal neurons. Species: Sprague-Dawley rat. Primary Antibody: Rabbit anti-pSer129 Antibody. Fibrils were diluted to 1 µg/uL in neuronal media consisting of B27, Glutamax, penicillin/strip, and neurobasalA and sonicated for 1 hour in a water bath. The sonicated stock was then used to achieve the final concentration of 1 µg/mL in the wells.

Electron Microscopy

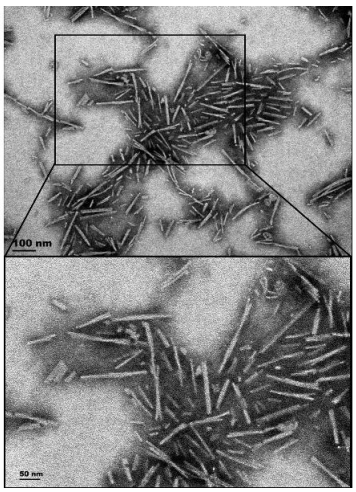

Image 3. TEM of A53T alpha synuclein Pre-formed Fibrils (ABIN6952303, ABIN6952304 and ABIN6952305)

Images

Please check the product details page for more images. Overall 6 images are available for ABIN6952303.