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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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Alpha Synuclein Protein

94 /100 8 Citations

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Mouse Recombinant Alpha Synuclein Pre-formed Fibrils (Type 1)
Catalog No. SPR-324

Product Name

Alpha Synuclein Protein

Description

Mouse Recombinant Alpha Synuclein Pre-formed Fibrils (Type 1)

Applications

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

Concentration

Lot/batch specific. See included datasheet.

Conjugates

No tag

Nature

Recombinant

Species

Mouse

Expression System

E. coli

Amino Acid Sequence

MDVFMKGLSK AKEGVVAAAE KTKQGVAEAA GKTKEGVLYV GSKTKEGVVH GVTTVAEKTQ EQVTNVGGAV VTGVTAV
AQK TVEGAGNIAA ATGFVKKDQM GKGEEGYPQE GILEDMPVDP GSEAYEMPSE EGYQDYEPEA

Purity

>95%

Protein Length

Full Length

Biological Activity

Endogenous alpha-synuclein phosphorylation. 100 μ M alpha synuclein protein monomer (SPR-323) seeded with 10 μ M alpha synuclein protein PFF (SPR-324) in 25 μ M Thioflavin T (PBS pH 7.4, 100 μ l reaction volume) generated an increased fluorescence intensity after incubation at 37°C with shaking at 600 rpm. 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

Cite This Product

Mouse Recombinant Alpha Synuclein Protein (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-324)

Certificate Of Analysis

Certified >95% pure using SDS-PAGE analysis.

Other Relevant Information

For best results, sonicate immediately prior to use. Refer to the Neurodegenerative Protein Handling Instructions on our website, or on the product datasheet for further information..

Biological Description

Alternative Names

Alpha synuclein PFFs, Alpha synuclein PFF, Alpha synuclein aggregates, Alpha synuclein protein aggregates, 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, NACP protein, PARK1 protein, SYN protein, Parkinson's disease familial 1 Protein

Research Areas

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

Cellular Localization

Cytoplasm, Membrane, Nucleus

Accession Number

NP_001035916.1

Gene ID

20617

Swiss Prot

O55042

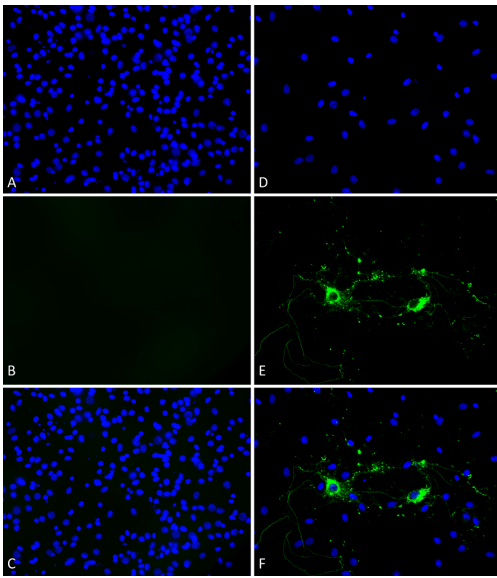
Scientific Background

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). +

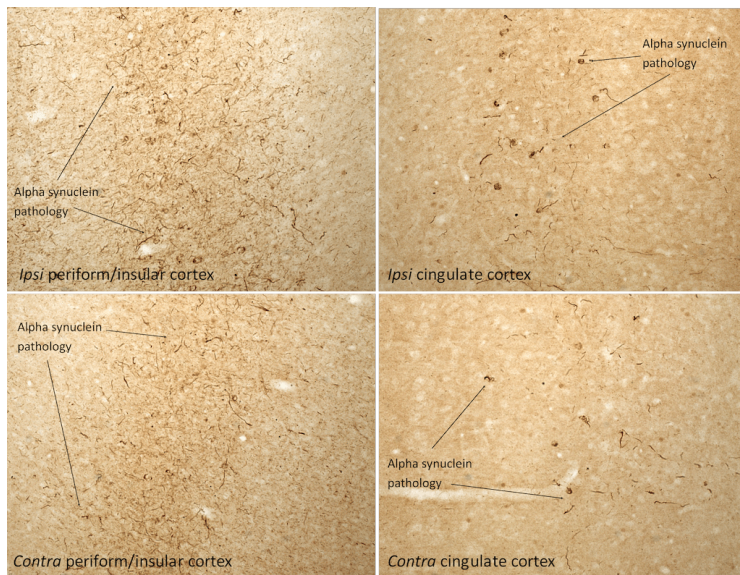
References

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.
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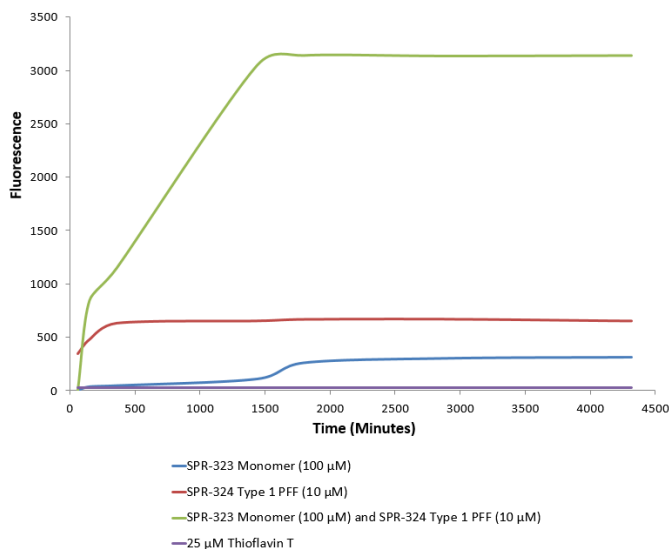
Product Images



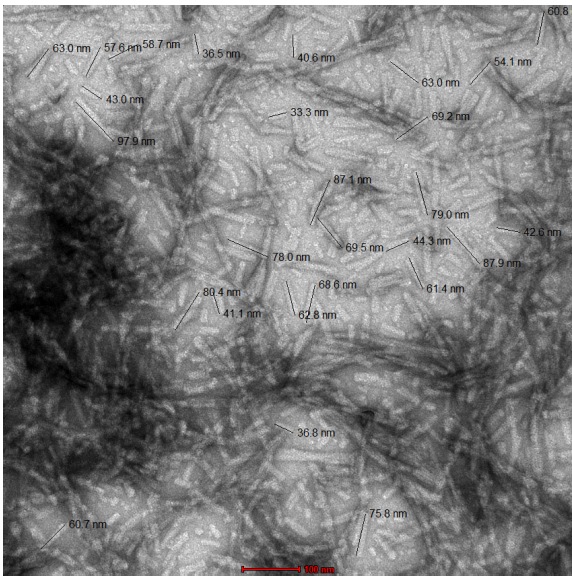
Primary rat hippocampal neurons show lewy body inclusion formation and loss of cells when treated with Type 1 mouse Alpha Synuclein Protein Pre-formed Fibrils (SPR-324) at 4 $\mu\text{g}/\text{ml}$ (D-F) on DVI2, but not when treated with a control (A-C). Tissue: Primary hippocampal neurons. Species: Sprague-Dawley rat. Fixation: 3% formaldehyde from PFA for 20 min. Blocker: 1:1 PBS:LiCOR Odyssey Block (LiCOR, 927-40010) and 30 mL/mL of 0.1% triton-X 100 for 30 min. Primary Antibody: Mouse anti-pSer129 Antibody (1:1000) and Rabbit anti-pSer129 (1:800) for 24 hours at 4°C. Secondary Antibody: ATTO 546 Donkey Anti-Mouse (1:700) and ATTO 488 Donkey Anti-Rabbit (1:700) for 1 hour at RT (composite green). Counterstain: Hoechst (blue) nuclear stain at 1:3000 for 1 hour at RT. Localization: Lewy body inclusions. Magnification: 20x.



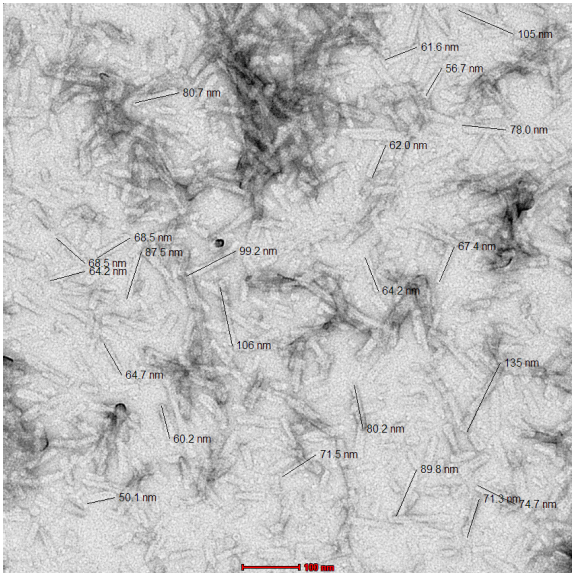
Immunohistochemistry analysis of rat brain injected with Type 1 mouse alpha synuclein PFFs (SPR-324). Species: Female Sprague-Dawley Rat. Rat was injected with 16 μ g Type 1 mouse alpha synuclein PFFs (SPR-324) in each of 2 injection sites: AP+1.6, ML+2.4, DV-4.2 from skull; and AP-1.4, ML+0.2, DV-2.8 from skull. 30 days post-injection. Fixation: Saline perfusion followed by 4% PFA fixation for 48 hrs. Primary antibody: rabbit monoclonal anti-pSer129 alpha synuclein. Secondary Antibody: Biotin-SP Donkey Anti-Rabbit IgG (H+L) at 1:500 for 2 hours in cold room with shaking. ABC signal amplification, DAB staining. Magnification: 20X. Alpha synuclein pathology is seen in the periform/insular cortex and the cingulate cortex on both the same (ipsi) and opposite (contra) sides as the injection sites.



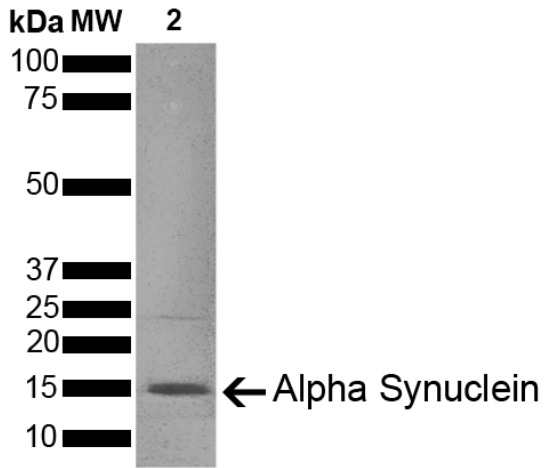
Type 1 alpha synuclein Pre-formed Fibrils (SPR-324) seed the formation of new alpha synuclein fibrils from the pool of alpha synuclein monomers (SPR-323). Thioflavin T is a fluorescent dye that binds to beta sheet-rich structures, such as those in alpha synuclein fibrils. Upon binding, the emission spectrum of the dye experiences a red-shift, and increased fluorescence intensity. Thioflavin T emission curves show increased fluorescence (correlated to alpha synuclein protein aggregation) over time when 10 μ M of Type 1 alpha synuclein Pre-formed Fibrils (SPR-324) is combined with 100 μ M of alpha synuclein monomer (SPR-323), as compared to Type 1 alpha synuclein Pre-formed Fibrils (SPR-324) or alpha Synuclein monomer (SPR-323) alone. Thioflavin T ex = 450 nm, em = 485 nm.



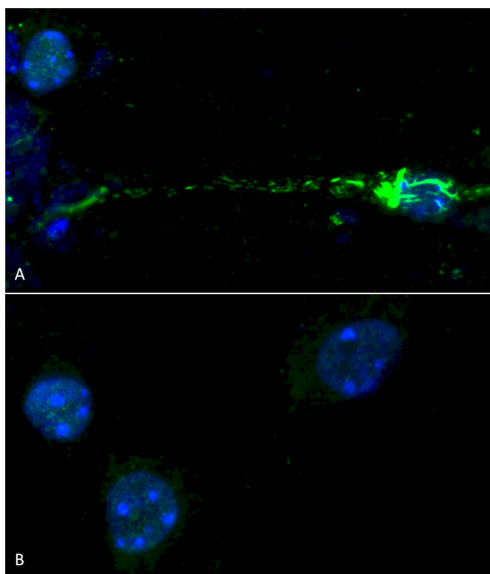
TEM of Type 1 mouse alpha synuclein Pre-formed Fibrils (SPR-324). Image was taken at 100kx magnification.



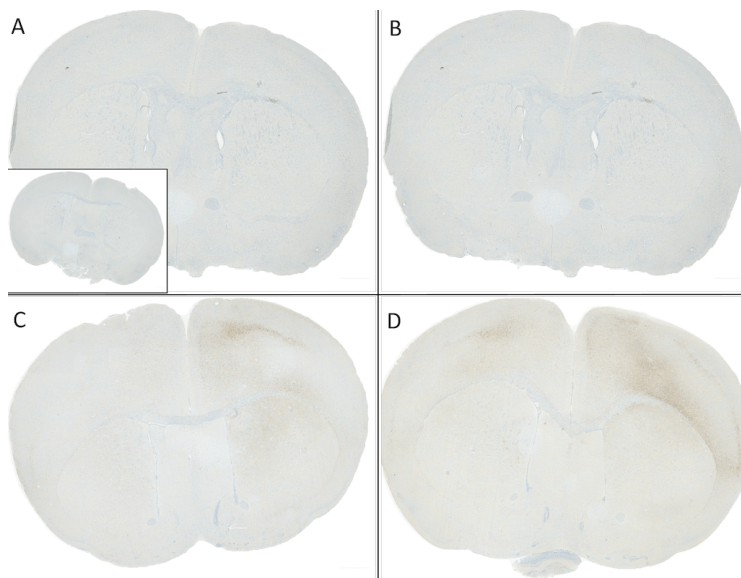
TEM of Type 1 mouse alpha synuclein Pre-formed Fibrils (SPR-324). Fibrils were sonicated and image was taken at 100kx magnification.



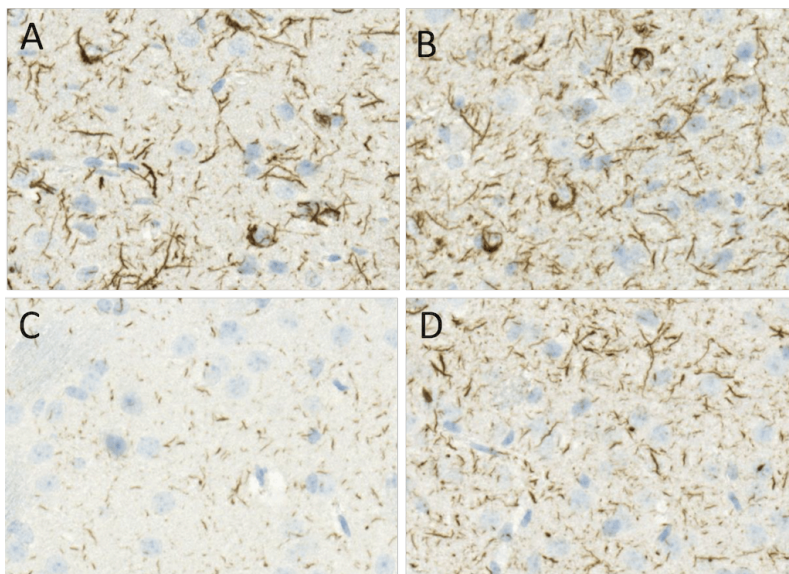
SDS-PAGE of ~14 kDa Type 1 Mouse Recombinant Alpha Synuclein Protein Pre-formed Fibrils (SPR-324). Lane 1: Molecular Weight Ladder (MW). Lane 2: Type 1 Alpha Synuclein Protein Pre-formed Fibrils (2 μ g) (SPR-324).



Primary mouse hippocampal neurons treated with 100 nM sonicated mouse alpha synuclein PFFs (SPR-324) (A). Phosphorylated alpha synuclein (detected with pSer129 antibody SPC-742) was visible in perinucleus and neurites compared to untreated control (B). Read the protocol at pabmabs.com/?p=7901. Image courtesy of Trine Rasmussen, Simon Molgaard Jensen at Aarhus University.



C57/BL6 mice were injected with sonicated recombinant mouse alpha synuclein monomers or fibrils at 8 weeks of age. Mice were unilaterally injected in the dorsal striatum (bregma AP + 0.2 mm, L +/1 2.0 mm, V - 3.0 mm) and sacrificed 30 days post-injection. (A) 1.25 uL mouse alpha synuclein monomers (SPR-323). (B) 2.5 uL mouse alpha synuclein monomers (SPR-323). (C) 2.5 ug alpha synuclein PFFs (SPR-324). (D) 5 ug alpha synuclein PFFs (SPR-324) Inset: PBS (negative control). Primary antibody: Anti-Alpha Synuclein pSer129 (SMC-600) at 1:10 000. Secondary antibody: anti-rabbit HRP. Mice injected with PFF displayed alpha synuclein staining in the striatum and cortex and contralateral to the injection site. Courtesy of: Porsolt.



C57/BL6 mice were injected with 5 ug sonicated mouse recombinant alpha synuclein PFFs (SPR-324) at 8 weeks of age. Mice were unilaterally injected in the dorsal striatum (bregma AP + 0.2 mm, L +/1 2.0 mm, V - 3.0 mm) and sacrificed 30 days post-injection. (A) contralateral cortex. (B) ipsilateral cortex. (C) contralateral striatum. (D) ipsilateral striatum. Primary antibody: Anti-Alpha Synuclein pSer129 (SMC-600) at 1:10 000. Secondary antibody: anti-rabbit HRP. Mice injected with PFF displayed alpha synuclein staining in the striatum and cortex and contralateral to the injection site. Courtesy of: Porsolt.

Product Citations

1x

94/100 | 8 CITATIONS | 14 IMAGES | TREND

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- [3x](#)
- [6x](#)

• Techniques

• Search for Techniques

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- SPR Assay (SPR)
- Staining (STAIN)
- Western Blot (WB)
- Concentration Assay (CO-A)
- Injection (INJECT)
- Sonication (SONIC)
- Incubation (INCU)
- Isolation (ISOLAT)
- Recombinant (RECOMB)
- Cell Culture (CELL-CTR)
- Expressing (EXP)
- Immunohistochemistry (IHC)
- In Vitro (INVITRO)
- Labeling (LBLNG)
- Positive Control (POS-CON)
- Binding Assay (BIND-A)

• Impact Factor

• Search for Impact Factor

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- 0 - 5
- 5 - 10
- 10 - 20

• Jour

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- Cell Fractionation (CF)
- Electron Microscopy (EM)
- FACS (FACS)
- Flow Cytometry (FC)
- Fluorescence (FLUOR)
- Flux Assay (FLUX)
- Fractionation (FRAC)
- Immunocytochemistry (ICC)
- Immunohistochemical staining (IMMH-S)
- Knock-Out (KNOCK-OUT)
- Lysis (LYSIS)

Reviews

Based on validation through cited publications.



StressMarq Biosciences

January 18, 2021: