Alpha Synuclein Protein

Active Human Recombinant Alpha Synuclein Protein Monomer (Type 2)
Catalog No. SPR-316

Product Name

Alpha Synuclein Protein

Description

Active Human Recombinant Alpha Synuclein Protein Monomer (Type 2)

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

MDVFMKGLSKAKEGVVAAAEKTKQGVAEAAGKTKEGVLYVGSKTKEGVVHGVATVAEKTKEQVTNVGGAVVTGVTAVA
QKTVEGAGSIAAATGFVKKDQLGKNEEGAPQEGILEDMPVDPDNEAYEMPSEEGYQDYEPEA

Purity

92%

Protein Length

Full Length

Biological Activity

Thioflavin T curve shows less β-sheet aggregation when Type 2 monomers (SPR-316) are seeded with PFFs compared to Type 1 monomers (SPR-321) seeded with PFFs.

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

-80ºC

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 Alpha Synuclein Protein (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-316)

Certificate Of Analysis

Certified 92% pure using SDS-PAGE analysis.

Biological Description

Alternative Names

Alpha synuclein monomer, Alpha-synuclein monomer, Alpha synuclein protein monomer, Alpha synuclein monomer, 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

Cellular Localization

Cytoplasm, Membrane, Nucleus

Accession Number

NP_000336.1

Gene ID

6622

Swiss Prot

P37840

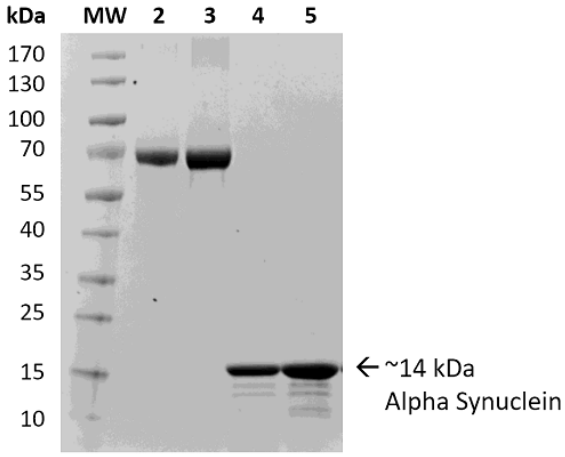
Scientific Background

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 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).

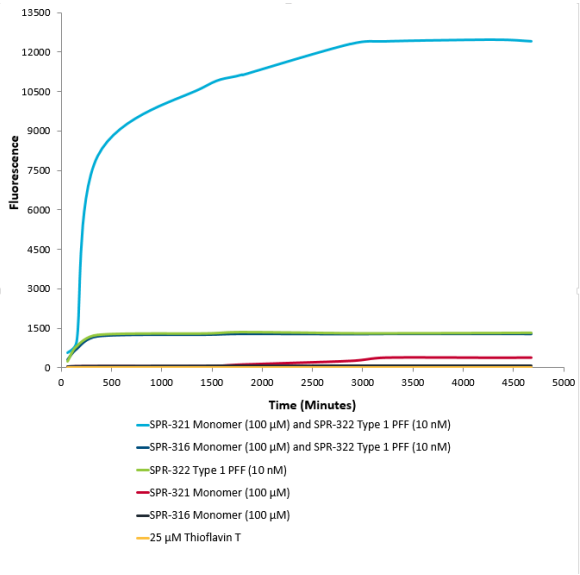
References

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.

Product Images



SDS-PAGE of ~14 kDa Human Recombinant Alpha Synuclein Protein Monomer (SPR-316). Lane 1: Molecular Weight Ladder (MW). Lane 2: BSA (2.5 µg). Lane 3: BSA (5 µg). Lane 4: Alpha Synuclein Protein Monomer (2.5 µg) (SPR-316). Lane 5: Alpha Synuclein Protein Monomer (5 µg) (SPR-316).



Type 1 alpha synuclein preformed fibrils (SPR-322) seed the formation of new alpha synuclein fibrils from the pool of alpha synuclein monomers (SPR-321). 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 nM of Type 1 alpha synuclein preformed fibrils (SPR-322) is combined with 100 µM of alpha synuclein monomer (SPR-321), as compared to when 10 nM of Type 2 alpha synuclein preformed fibrils (SPR-317) is combined with 100 µM of alpha synuclein monomer (SPR-321) or 100 µM of alpha Synuclein monomer (SPR-316). Thioflavin T ex = 450 nm, em = 485 nm.