Alpha Synuclein E114C Mutant Monomers: ATTO 488

Discovery through Partnership | Excellence through Quality

Human Recombinant Alpha Synuclein E114C Mutant Monomers: ATTO 488
Catalog No. SPR-517-A488

distributed in the US/Canada by:
EAGLE BIOSCIENCES, INC.
20A NW Blvd, Suite 112 Nashua, NH 03063
Phone: 617-419-2019 FAX: 617-419-1110
www.EagleBio.com info@eaglebio.com

Product Name

Alpha Synuclein E114C Mutant Monomers: ATTO 488

Description

Human Recombinant Alpha Synuclein E114C Mutant Monomers: ATTO 488

Applications

WB, Native PAGE, In vitro Assay, In vivo Assay

Concentration

Lot/batch specific. See included datasheet.

Conjugates

ATTO 488

Nature

Recombinant

Species

Human

Expression System

E. coli

Amino Acid Sequence

MDVFMKGLSKAKEGVVAAAEKTKQGVAEAAGKTKEGVLYVGSKTKEGVVHGVATVAEKTKEQVTNVGGAVVTGVTAVAQKTV
EGAGSIAAATGFVKKDQLGKNEEGAPQEGILCDMPVDPDNEAYEMPSEEGYQDYEPEA

Purity

>95%

Protein Length

140 AA

Protein Size

14.434 kDa

Field Of Use

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

Properties

Storage Buffer

1X 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 & SEC purified

Cite This Product

Human Recombinant Alpha Synuclein E114C Mutant Monomers: ATTO 488 (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-517)

Certificate Of Analysis

Protein certified >95% pure on SDS-page and nanodrop analysis, endotoxin below 5 EU/mL at 2 mg/mL

Other Relevant Information

For corresponding PFFs, see catalog# SPR-518-A488

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's disease familial 1 Protein

Research Areas

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

Swiss Prot

P37840

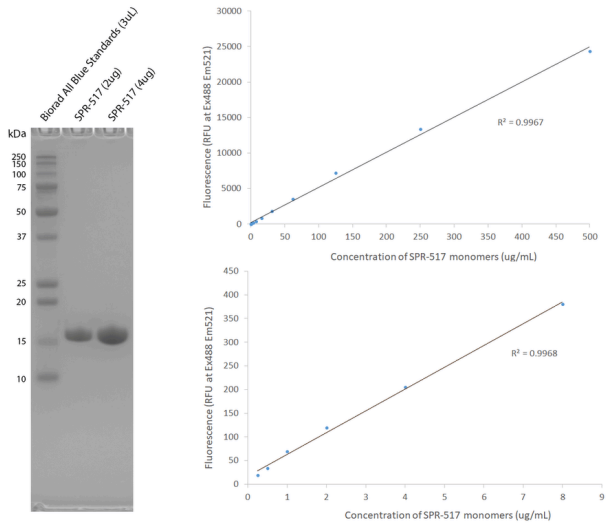
Scientific Background

The alpha-synuclein (aSyn) E114C mutation facilitates a single site-specific conjugation with ATTO-488 maleimide that avoids any hindrance on fibrilization or cell entry that may be conferred by non-specific lysine targeting conjugations. This conjugation is ideal due to internal position relative to C-terminal truncation sites, proximity to the NAC, and lack of interference with recruitment in vitro or in primary neurons (1, 2). Pre-formed fibrils (PFFs) generated with 5-25% fluorescently tagged E114C mutants have demonstrated a relative potency >80% compared to wild-type aSyn for inducing misfolding of endogenous aSyn, indicating no significant perturbation of seeding in living cells (1). Atto-488 is a useful tool for identifying cell entry, as the addition of Trypan Blue to cultures prior to imaging will quench fluorescence of extracellular Atto-488 conjugated aSyn (3). Our aSyn E114C-Atto-488 PFFs, which contain 10% fluorescently tagged E114C mutants, are an excellent tool for studying cell entry and localization, with demonstrated entry into neurons after trypan blue quenching.

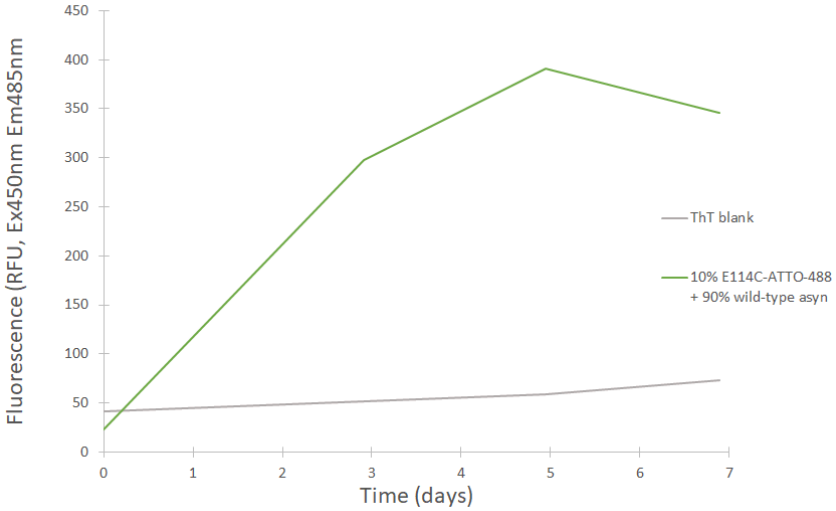
References

1.,Haney et al. 2016. Comparison of strategies for non-perturbing labeling of α-synuclein to study amyloidogenesis. Organic & Biomolecular Chemistry. DOI: 10.1039/c5ob02329g
2.,Karpowicz et al. 2017. Selective imaging of internalized proteopathic a-synuclein seeds in primary neurons reveals mechanistic insight into transmission of synucleinopathies. JBC. DOI: 10.1074/jbc.M117.780296
3.,Pieri et al. 2016. Structural and functional properties of prefibrillar α-synuclein oligomers. Scientific Reports. DOI: 10.1038/srep24526

Product Images



Purity and fluorescent signal of alpha-synuclein E114C-ATTO-488 monomers (SPR-517). Left: SDS-PAGE analysis of SPR-517 monomers on a 12% Bis-Tris gel (left). Right: SPR-517 concentration and fluorescence (excitation 488nm, emission 521 nm) exhibit a linear relationship at all concentrations tested (250 ng/mL – 500 µg/mL).



Fibril formation of ATTO-488 conjugated alpha-synuclein E114C monomers (SPR-517). Fibrils were generated from a mixture of 10% E114C-ATTO-488 conjugated monomers and 90% wild-type monomers shaken 1000 rpm at 37oC for seven days in 1X PBS pH 7.4. Prior to measurement, a sample was taken, diluted to 0.5 mg/mL in 1X PBS pH 7.4 with 25 µM ThT and mixed. Excitation 450nm, emission 485 nm. Note: overall fibril ThT signal is dampened due to overlapping Atto-488 absorption maxima with ThT emission maxima.

Product Citations

Reviews

There are no reviews yet.