Product datasheet

Recombinant Human Alpha-synuclein protein monomer (Active) ab218818

Description

Product name
Recombinant Human Alpha-synuclein protein monomer (Active)

Biological activity
100 µM alpha synuclein protein monomer (ab218818), seeded with 10 nM alpha synuclein protein aggregate in 25 µM Thioflavin T (ab120751) (PBS pH 7.4, 100 µl reaction volume), generated a fluorescence intensity of 13,000 Relative Fluorescence Units after incubation at 37°C with shaking at 600 rpm for 24 hours.

Fluorescence was measured by excitation at 450 nm and emission at 485 nm, on a Molecular Devices Gemini XPS microplate reader.

Purity
> 95% SDS-PAGE.
ab218818 is purified by ion exchange.

Expression system
Escherichia coli

Accession
P37840-1

Protein length
Full length protein

Animal free
No

Nature
Recombinant

Species
Human

Sequence
MDVFMKGLSK AKEGVVAAAE KTKQGVAEAA GKTKEGVLYV GSKTKEGVVH GVATVAEKTK EQVTNVGGA VTVGTVQAQK TVEGAGSIAA ATGFVKKDQL GKNXEGAPQE GILEDMPVDP DNEAYEMPSE EGYQDYEPEA

Predicted molecular weight
14 kDa

Amino acids
1 to 140

Additional sequence information
(NP_000336.1) (GeneID 6622)

Description
Recombinant human Alpha-synuclein protein (Active)

Specifications

Our Abpromise guarantee covers the use of ab218818 in the following tested applications.

Applications
Functional Studies
## Preparation and Storage

**Stability and Storage**
Shipped on Dry Ice. Store at -80°C. Avoid freeze / thaw cycle.

pH: 7.40
Constituent: PBS

This product is an active protein and may elicit a biological response in vivo, handle with caution.

## General Info

**Function**
May be involved in the regulation of dopamine release and transport. Induces fibrillization of microtubule-associated protein tau. Reduces neuronal responsiveness to various apoptotic stimuli, leading to a decreased caspase-3 activation.

**Tissue specificity**
Expressed principally in brain but is also expressed in low concentrations in all tissues examined except in liver. Concentrated in presynaptic nerve terminals.

**Involvement in disease**
Genetic alterations of SNCA resulting in aberrant polymerization into fibrils, are associated with several neurodegenerative diseases (synucleinopathies). SNCA fibrillar aggregates represent the major non A-beta component of Alzheimer disease amyloid plaque, and a major component of Lewy body inclusions. They are also found within Lewy body (LB)-like intraneuronal inclusions, glial inclusions and axonal spheroids in neurodegeneration with brain iron accumulation type 1.

- Parkinson disease 1
- Parkinson disease 4
- Dementia Lewy body

**Sequence similarities**
Belongs to the synuclein family.

**Domain**
The 'non A-beta component of Alzheimer disease amyloid plaque' domain (NAC domain) is involved in fibrils formation. The middle hydrophobic region forms the core of the filaments. The C-terminus may regulate aggregation and determine the diameter of the filaments.

**Post-translational modifications**
Phosphorylated, predominantly on serine residues. Phosphorylation by CK1 appears to occur on residues distinct from the residue phosphorylated by other kinases. Phosphorylation of Ser-129 is selective and extensive in synucleinopathy lesions. In vitro, phosphorylation at Ser-129 promoted insoluble fibril formation. Phosphorylated on Tyr-125 by a PTK2B-dependent pathway upon osmotic stress.

Hallmark lesions of neurodegenerative synucleinopathies contain alpha-synuclein that is modified by nitration of tyrosine residues and possibly by dityrosine cross-linking to generated stable oligomers.

Ubiquitinated. The predominant conjugate is the diubiquitinated form.

Acetylation at Met-1 seems to be important for proper folding and native oligomeric structure.

**Cellular localization**
SDS-PAGE of ~14 kDa Human Recombinant Alpha Synuclein Protein Monomer (SPR-321). Lane 1: Molecular Weight Ladder (MW). Lane 2: Alpha Synuclein Protein Monomer (2 µg) (SPR-321).

ThT emission curves show increased fluorescence (correlated to alpha-synuclein protein aggregation) over time when 10 nM of active alpha-synuclein aggregate (ab218819) is combined with 100 µM of active alpha-synuclein monomer (ab218818) (light blue), as compared to when 100 µM of active alpha-synuclein monomer is combined with 10 nM of control alpha-synuclein aggregate (purple line), or 100 µM of control alpha-synuclein monomer (ab218816) is combined with 10 nM of control alpha-synuclein aggregate (ab218819) (dark blue).

ThT ex = 450 nm, em = 485 nm. View protocol.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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