



# SZABO SCANDIC

Part of Europa Biosite

## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

Weitere Information auf den folgenden Seiten!  
See the following pages for more information!



### Lieferung & Zahlungsart

siehe unsere [Liefer- und Versandbedingungen](#)

### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

### SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

[mail@szabo-scandic.com](mailto:mail@szabo-scandic.com)

[www.szabo-scandic.com](http://www.szabo-scandic.com)

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

# Alpha Synuclein A90C Mutant Monomers

90 /100 1 Cita

Powered by Bioz



Discovery through Partnership | Excellence through Quality

Human Recombinant Alpha Synuclein A90C  
Mutant Monomers  
Catalog No. SPR-478

## Product Name

Alpha Synuclein A90C Mutant Monomers

## Description

Human Recombinant Alpha Synuclein A90C Mutant Monomers

## Applications

WB, SDS PAGE, In vitro Assay, Conjugation, FRET

## Concentration

Lot/batch specific. See included datasheet.

## Conjugates

No tag

## Nature

Recombinant

## Species

Human

## Expression System

E. coli

## Amino Acid Sequence

MDVFMKGLSKAKEGVVAAAETKQGVAAEAGKTEKGVLYVGSKTKEGVVHGVATVAEKTKEQVTNVGGAWVTGVTAVAQ  
KTVEGAGSIACATGFVKKDQLGKNEEGAPQEGILEDMPVDPDNEAYEMPSEEGYQDYPEA

## Purity

>95%

## Other Resources

## Protein Length

---

Full length (1 - 140 aa)

---

### **Protein Size**

---

14.49 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**

20mM HEPES pH 7.4, 150mM NaCl, 1mM TCEP pH 7.0

---

### **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**

---

Human Recombinant Alpha Synuclein A90C Mutant Monomers (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-478)

---

### **Certificate Of Analysis**

---

Protein certified >95% pure on SDS-PAGE & Nanodrop analysis

---

### **Other Relevant Information**

---

TCEP present to prevent disulfide bonds. Maleimide coupling reactions can be performed efficiently in the presence of TCEP.

---

## **Biological Description**

---

### **Alternative Names**

SNCA, alpha-synuclein, synuclein, Alpha synuclein monomer, Alpha-synuclein monomer, Alpha synuclein protein monomer, Alpha synuclein monomer, Alpha-synuclein protein, SNCA protein

---

## Research Areas

---

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

---

## Swiss Prot

---

P37840-1 (wildtype)

---

## Scientific Background

---

Thioflavin-T (ThT) fluorescence remains a common measurement of alpha-synuclein fibril formation, yet ThT exhibits poor affinity for oligomers and early aggregates. The alpha-synuclein A90C mutant monomers can be specifically labelled with alternative fluorophores (such as Alexa 488/Alexa 647) via maleimide chemistry to enable more sensitive FRET analysis of aggregation. The A90C mutant showed no perturbation of monomer structure and Alexa Fluor dye attachment to cysteine 90 was demonstrated to have no effect on the kinetics of fibril formation (1-3). Residue 90 is at the periphery of the NAC region, a key constituent of the alpha-synuclein  $\beta$ -sheet fibril core, which results in fluorophores on different monomers coming into close proximity upon formation of  $\beta$ -sheet structure during aggregation (4). Note - to prevent the potential mis-translation of alpha-synuclein Y136 as C136 during E.coli expression, the Y136-TAT construct was used (5).

---

## References

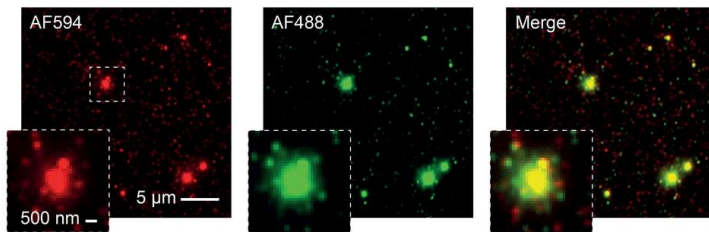
---

- 1.Thirunavukkuarasu, et al. 2008. Multiparametric Fluorescence Detection of Early Stages in the Amyloid Protein Aggregation of Pyrene-labeled  $\alpha$ -Synuclein. *J. Mol. Biol.* 378(5): 1064-73. <https://doi.org/10.1016/j.jmb.2008.03.034>
  - 2.Cremades, et al. 2012. Direct Observation of the Interconversion of Normal and Toxic Forms of  $\alpha$ -Synuclein. *Cell.* 149(5): 1048-59. doi: 10.1016/j.cell.2012.03.037
  - 3.Horrocks et al. 2015. Fast Flow Microfluidics and Single-Molecule Fluorescence for the Rapid Characterization of  $\alpha$ -Synuclein Oligomers. *Anal. Chem.* 87(17): 8818-26. <https://doi.org/10.1021/acs.analchem.5b01811>
  - 4.Iljina et al. 2016. Kinetic model of the aggregation of alpha-synuclein provides insights into prion-like spreading. *PNAS.* 113(19): E1206-15. doi: 10.1073/pnas.1524128113
  - 5.Masuda, et al. 2006. Cysteine misincorporation in bacterially expressed human alpha-synuclein. *FEBS Lett.* 580(7): 1775-9. doi: 10.1016/j.febslet.2006.02.032
- 

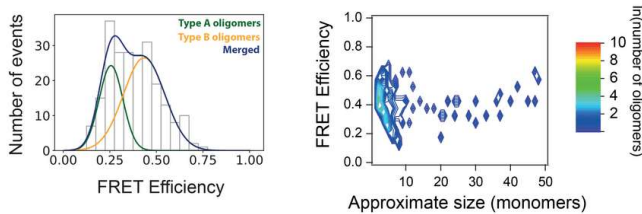
## Product Images

---

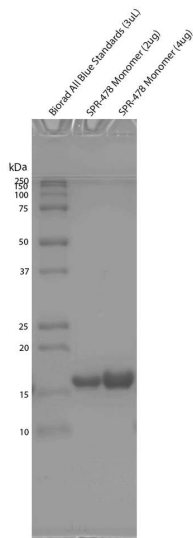
**A** Two color imaging of AF594- and AF488-tagged A90C alpha-synuclein



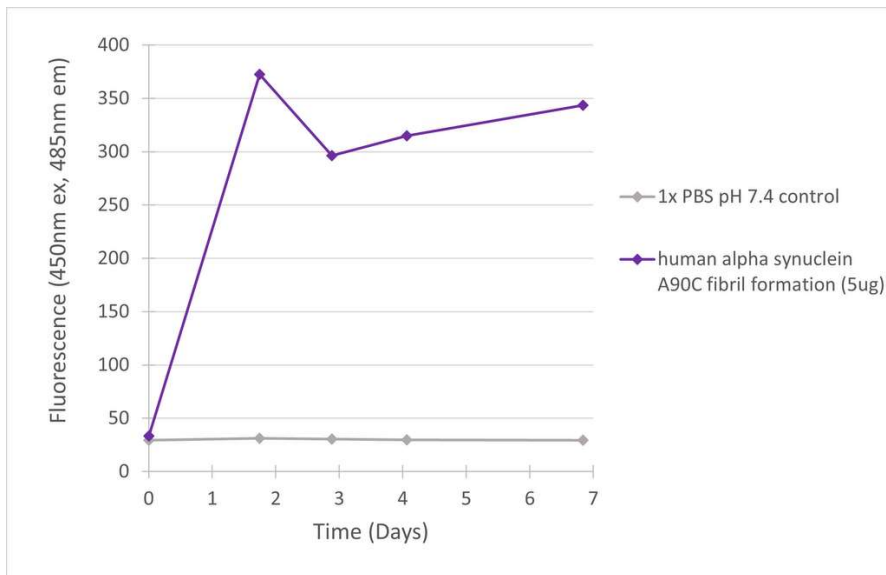
**B** Single-molecule confocal detection of FRET from AF488- and AF594-tagged alpha synuclein aggregates:



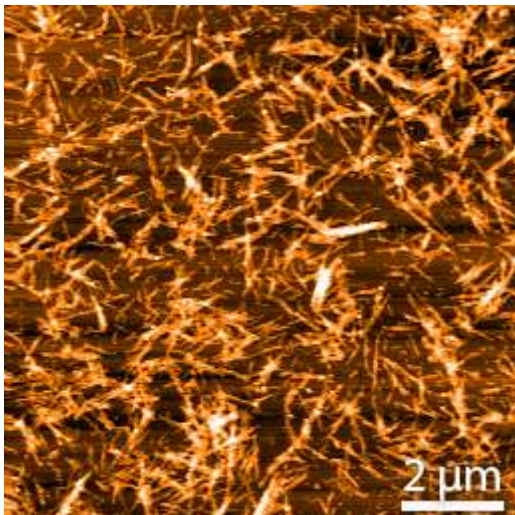
Co-aggregation of AF594 and AF488-labelled A90C alpha-synuclein monomers. Half of monomers were labelled with AF594 and half with AF488, and then allowed to aggregate prior to imaging using (A) total internal reflection microscopy (TIRFM) at the two excitation and emission maxima and (B) single-molecule confocal FRET detection of two oligomer types at Ex488 and Em594. In depth method and oligomer details were previously described by Horrocks et al. in 2015 (<https://doi.org/10.1021/acs.analchem.5b01811>).



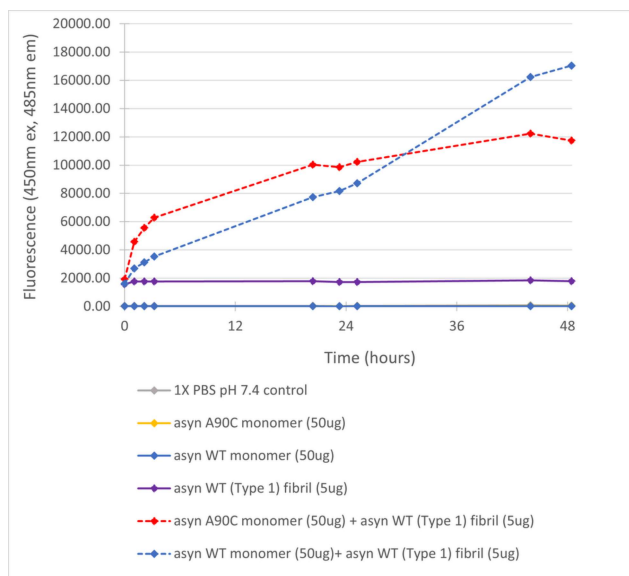
Coomassie stain SDS gel analysis of E coli expressed human alpha synuclein A90C monomer showing the protein purity. Lane 1: Biorad All Blue Standards (3uL), Lane 2: E coli expressed human alpha synuclein A90C monomer (2ug), lane 3: E coli expressed human alpha synuclein A90C monomer (4ug).



Fibril formation human alpha synuclein A90C mutant measured by ThT in vitro. Human alpha synuclein A90C monomers form ThT-positive fibrils over the course of 7 days when shaken at 1000 rpm at 37°C.



Representative AFM images of fibrilized alpha-synuclein A90C (non-conjugated). Samples were diluted to 0.25 mg/mL in dH<sub>2</sub>O, mounted on freshly cleaved mica, washed, dried and analyzed with tapping mode. Image is 10 x 10 μm x-y with a z-range of 30 nm. Scale bar = 2 μm.



Seeding activity of human alpha synuclein A90C mutant measured by ThT in vitro. Human alpha synuclein A90C monomers are rapidly seeded by wild-type (type 1) alpha synuclein pre-formed fibrils to a similar extent as wild-type monomers.

## Product Citations

90/100 | 1 CITATIONS | 2 IMAGES | 2 TABLES

1x

- [1x](#)
- [2x](#)
- [3x](#)
- [6x](#)




---

**Loss of angiotensin II receptor expression in dopamine neurons in Parkinson's disease correlates with pa**  
W Michael Zawada, Robert E Mrak, ..., W Sue T Griffin  
Acta Neuropathologica Communications | 2015 Feb 03 | PubMed ID: 25645462 | [Read Article](#)

**Article Snippet**  
".. primary antibody for AT1 detection was a goat IgG from Santa Cruz (Cat# sc-1173-G).. For each case, at substantia nigra were cut, and at least one section immunostained for each of the following: i ) TH/AT1/DA StressMarq/AT1/DAPI; iv ) caspase-3/TH/DAPI; v )  $\alpha$ -synuclein; and vi ) calbindin D28k.. For select AMC sections were cut and processed for .." [More...](#) | [Share Article](#)

**Table Legend**  
"Age, gender, clinical diagnosis, cause of death, post-mortem interval, and brain weight for ..." [More...](#)

**Loss of angiotensin II receptor expression in dopamine neurons in Parkinson's disease correlates with pa**  
W Michael Zawada, Robert E Mrak, ..., W Sue T Griffin  
Acta Neuropathologica Communications | 2015 Feb 03 | PubMed ID: 25645462 | [Read Article](#)

**Article Snippet**  
".. primary antibody for AT1 detection was a goat IgG from Santa Cruz (Cat# sc-1173-G).. For each case, at substantia nigra were cut, and at least one section immunostained for each of the following: i ) TH/AT1/DA

## Reviews

---

There are no reviews yet.