Tau-441 (2N4R) P301S Mutant Pre-formed Fibrils (Baculovirus/Sf9)

Human Recombinant Tau-441 (2N4R) P301S Mutant Protein Pre-formed Fibrils (Baculovirus/Sf9)
Catalog No. SPR-471

Product Name

Tau-441 (2N4R) P301S Mutant Pre-formed Fibrils (Baculovirus/Sf9)

Description

Human Recombinant Tau-441 (2N4R) P301S Mutant Protein Pre-formed Fibrils (Baculovirus/Sf9)

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

Baculovirus

Amino Acid Sequence

MAEPRQEFEV MEDHAGTYGL GDRKDQGGYT MHQDQEGDTD AGLKESPLQT PTEDGSEEPG SETSDAKSTP TAEDVTAP LV DEGAPGKQAA AQPHTEIPEG TTAEEAGIGD TPSLEDEAAG HVTQARMVSK SKDGTGSDDK KAKGADGKTK IATPRGA APP GQKGQANATR IPAKTPPAPK TPPSSGEPPK SGDRSGYSSP GSPGTPGSRS RTPSLPTPPT REPKKVAVVR TPPKSPSSA K SRLQTAPVPM PDLKNVKSKI GSTENLKHQP GGGKVQIINK KLDLSNVQSK CGSKDNIKHVSGGGSVQIVY KPVDLSKVTS

KCGSLGNIHH KPGGGQVEVK SEKLDFKDRV QSKIGSLDNI THVPGGGNKK IETHKLTFRE NAKAKTDHGA EIVYKSPVVS G DTSPRHLSN VSSTGSIDMV DSPQLATLAD EVSASLAKQG L

Purity

>95%

Protein Length

Full Length

Biological Activity

Thioflavin T emission curves show increased fluorescence (correlated to tau aggregation) over time when tau monomers (SPR-473) are combined with tau fibrils (SPR-471).

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

Cite This Product

Human Recombinant Tau Protein (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-471)

Certificate Of Analysis

Certified >95% pure using SDS-PAGE analysis.

Other Relevant Information

SPR-471 is post-translationally modified due to baculovirus/SF9 insect cells expression system.

Biological Description

Alternative Names

Tau PFFs, Tau PFF, Tau protein Pre-formed Fibrils, Tau aggregates, microtubule-associated protein Tau, MAPT, MAP, microtubule-associated protein, Paired Helical Filament-Tau, Phf-Tau, Neurofibrillary Tangle Protein, G Protein Beta1/Gamma2 Subunit-Interacting Factor 1, Isoform 4, tubulin-associated unit, mouse Tau protein, P301S mutant Tau, 2N4R Tau, Tau441

Research Areas

Alzheimer's Disease, Axon Markers, Cell Markers, Cell Signaling, Cytoskeleton, Microtubules, MT Associated Proteins, Neurodegeneration, Neuron Markers, Neuroscience, Tangles & Tau

Cellular Localization

Axolemma, Axolemma Plasma Membrane, Axon, Cell Body, Cell membrane, Cytoplasm, Cytoplasmic Ribonucleoprotein Granule, Cytoplasmic Side, Cytoskeleton, Cytosol, Dendrite, Growth cone, Microtubule, Microtubule Associated Complex, Neurofibrillary Tangle, Neuronal Cell Body, Nuclear Periphery, Nuclear Speck, Nucleus, Peripheral membrane protein, Plasma Membrane, Tubulin Complex

Accession Number

NP_005901.2

Gene ID

4137

Swiss Prot

P10636

Scientific Background

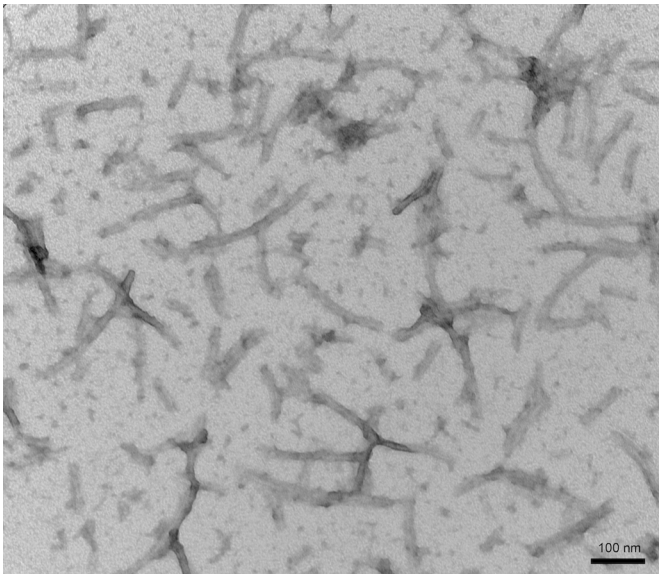
Alzheimer’s Disease (AD) is the most common neurodegenerative disease, affecting 10% of seniors over the age of 65 (1). It was named after Alois Alzheimer, a German scientist who discovered tangled bundles of fibrils where neurons had once been in the brain of a deceased patient in 1907 (2). Tau (tubulin-associated unit) is normally located in the axons of neurons where it stabilizes microtubules. Tauopathies such as AD are characterized by neurofibrillary tangles containing hyperphosphorylated tau fibrils (3). There are six isoforms of tau in the adult human brain: three with four repeat units (4R) and three with three repeat units (3R) (4). 2N4R, or Tau-441 is the full length tau protein. P301S is a mutation encoded by exon 10 (4) that impairs the ability of tau to assemble microtubules (5).

References

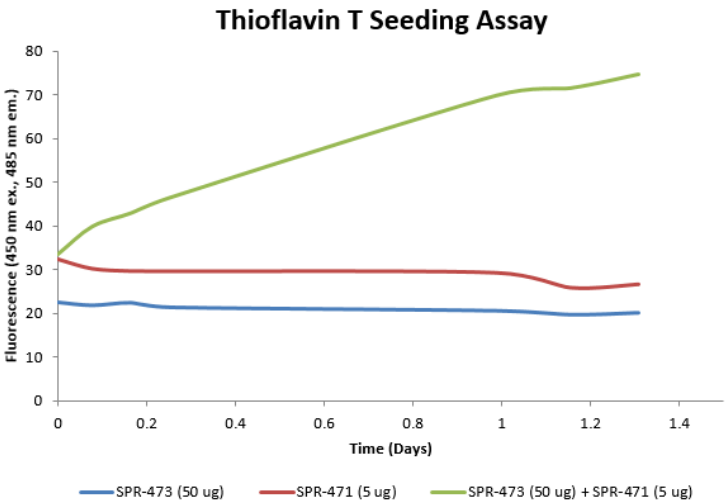
1. www.alz.org/alzheimers-dementia/facts-figures
2. Alzheimer, A. Über eine eigenartige Erkrankung der Hirnrinde. Allg. Z. Psychiatr. Psych.-Gerichtl. Med. 64, 146–148 (1907)

3. Matsumoto, G. et al. (2018). Int J Mol Sci. 19, 1497.
4. Goedert, M. and Spillantini, M. G. (2017). Mol Brain. 10:18.
5. Bugiani, O. et al. (1999). J Neuropathol Exp Neurol. 58(6):667-77.

Product Images



TEM of recombinant Tau441 (2N4R), P301S mutant Pre-formed fibrils (PFFs) expressed in baculovirus



Thioflavin T assay of tau pre-formed fibrils (PFFs) combined with tau monomers. The PFFs seed the aggregation of the monomers

Human Tau 2N4R P301S (Baculovirus)	
Site	Modification
M11	16_M_Oxidation
M31	16_M_Oxidation
T39	80_T_Phospho
S46	80_S_Phospho
T50	80_T_Phospho
S61	80_S_Phospho
S68	80_S_Phospho
T69	80_T_Phospho
T111	80_T_Phospho
S113	80_S_Phospho
T175	80_T_Phospho
T181	80_T_Phospho
S184	80_S_Phospho
S185	80_S_Phospho
S191	80_S_Phospho
S195	80_S_Phospho
Y197	80_Y_Phospho
S202	80_S_Phospho
T205	80_T_Phospho
S208	80_S_Phospho

Human Tau 2N4R P301S (Baculovirus)	
S210	80_S_Phospho
T212	80_T_Phospho
S214	80_S_Phospho
T217	80_T_Phospho
T231	80_T_Phospho
S237	80_S_Phospho
S262	80_S_Phospho
S301	80_S_Phospho
T386	80_T_Phospho
Y394	80_Y_Phospho
S396	80_S_Phospho
S400	80_S_Phospho
T403	80_T_Phospho
S404	80_S_Phospho
S409	80_S_Phospho
T414	80_T_Phospho
S416	80_S_Phospho
M419	16_M_Oxidation
S422	80_S_Phospho
S433	80_S_Phospho
S435	80_S_Phospho

Mass spectrometry analysis of Tau441 (2N4R) P301S mutant monomers (SPR-473) expressed in baculovirus. These monomers were used to produce Tau441 (2N4R) P301S mutant pre-formed fibrils (PFFs) (SPR-471). Mass spectrometry analysis shows phosphorylation at sites including threonine 181, serine 202, and threonine 205.

Product Citations (0)

94/100 | 5 CITATIONS | TREND

Techniques

- Search for Techniques
- SPR Assay (SPR)
- Incubation (INCU)
- Mutagenesis (MUTA)
- Recombinant (RECOMB)
- Transfection (TNSF)
- Concentration Assay (CO-A)
- Expressing (EXP)
- Isolation (ISOLAT)

Impact Factor

- Search for Impact Factor
- 0 - 5
- 10 - 20

Journals

New **Polarized microtubule remodeling transforms the morphology of reactive microglia and drives cyto**
Max Adrian, Martin Weber, ..., Casper C Hoogenraad

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Polarized microtubule remodeling transforms the morphology of reactive microglia and drives cytokine rele
Max Adrian, Martin Weber, ..., Casper C. Hoogenraad

Nature Communications | 2023 Oct 09 | PubMed ID: 37813836 | Read Article

".. agitation at 37 degrees for 24 h, and both added at 110 µM concentration.. Recombinant tau wild-type monome **Stressmarq Biosciences**) were added at 4 µg/ml.. Nocodazole and taxol (both Sigma) were used at 1 µM unless o

Currently there are no citations for this product.

Reviews

Based on validation through cited publications.

★★★★★

StressMarq Biosciences
July 12, 2023: