

Tau Protein

Active Human Recombinant Tau441 (2N4R),
P301S mutant Protein Pre-formed Fibrils
Catalog No. SPR-329



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Product Name

Tau Protein

Description

Active Human Recombinant Tau441 (2N4R), P301S mutant Protein Pre-formed Fibrils

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

MAEPRQEFEV MEDHAGTYGL GDRKDQGGYT MHQDQEGDTD AGLKESPLQT PTEDGSEEPG SETSDAKSTP TAED
VTAPLV DEGAPGKQAA AQPHTIPEG TTAEEAGIGD TPSLEDEAAG HVTQARMVSK SKDGTGSDDK KAKGADGKTK
IATPRGAAPP GQKGQANATR IPAKTPAPK TPPSSGEPPK SGDRSGYSSP GSPGTPGSRs RTPSLPTPPT REPKKVAV
VR TPPKSPSSAK SRLQTAPVPM PDLKNVSKSI GSTENLKHQP GGGKVQIINK KLDLSNVQSK CGSKDNIKHVSGGGS
VQIVY KPVDSLKVTS KCGSLGNIHH KPGGGQVEVK SEKLDKDRV QSKIGSLDNI THVPGGGNKK IETHKLTFRE NA
KAKTDHGA EIVYKSPVVS GDTSPRHLSN VSSTGSIDMV DSPQLATLAD EVSASLAKQG L

Protein Length

Full Length

Biological Activity

Thioflavin T emission curve shows increased fluorescence (correlated to tau protein fibrillation) when active tau PFFs are combined with active tau monomers.

Field Of Use

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

Properties

Storage Buffer

10 mM HEPES, 100 mM NaCl pH 7.4

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

Specificity

~45.8 kDa

Cite This Product

Human Recombinant Tau Protein (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-329)

Biological Description

Alternative Names

Active tau PFFs, active tau protein preformed fibrils, active tau aggregates, microtubule-associated protein tau, MAPT, MAP, microtubule-associated protein, tau-441, Paired Helical Filament-Tau, Phf-Tau, Neurofibrillary Tangle Protein, G Protein Beta1/Gamma2 Subunit-Interacting Factor 1, Isoform 2, tubulin-associated unit

Research Areas

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

Cellular Localization

Cytoplasm, Axolemma, Axolemma Plasma Membrane, Axon, Cell Body, Cell membrane, 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

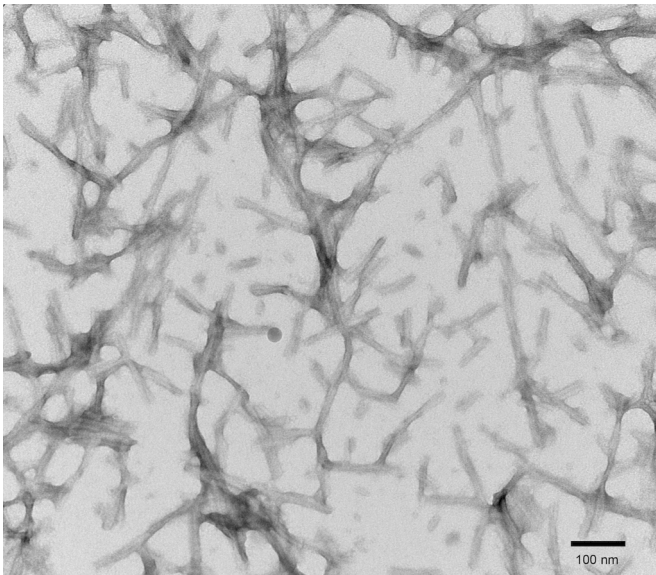
Scientific Background

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).

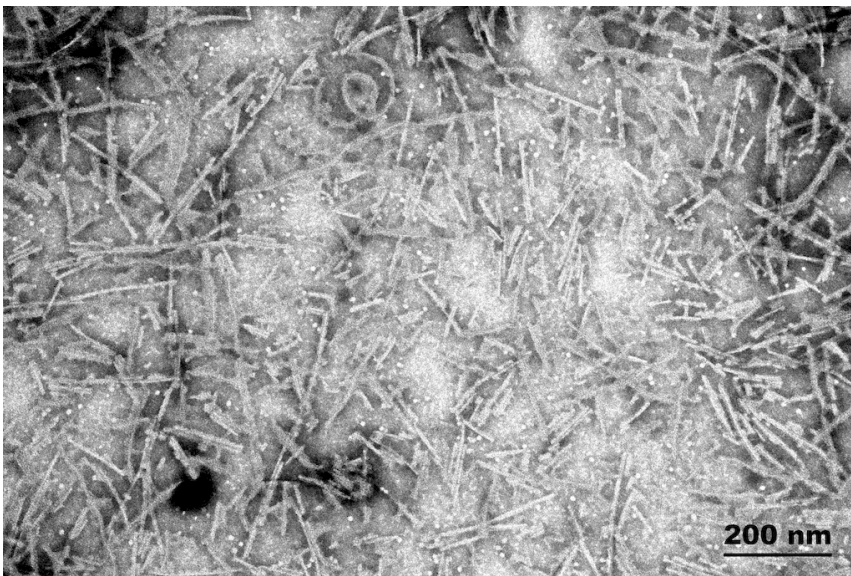
References

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.
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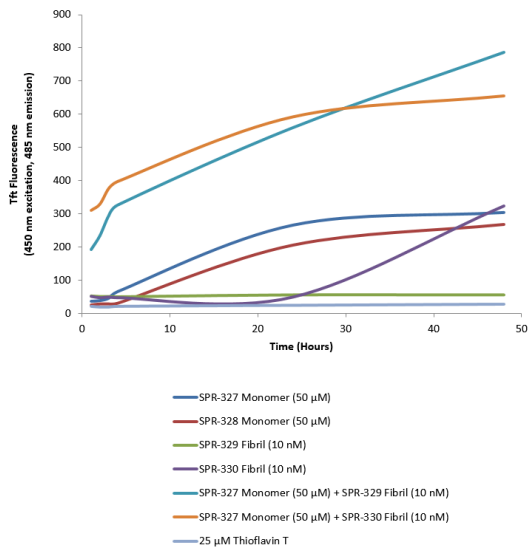
Product Images



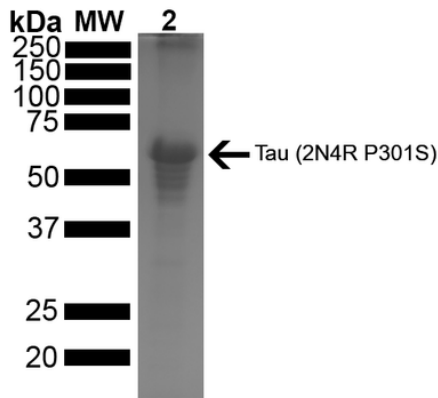
TEM of recombinant Tau441 (2N4R), P301S mutant preformed fibrils (PFFs) at 150kx magnification. HV = 80kV. Fibrils were sonicated and stained with uranyl acetate.



TEM of recombinant Tau441 (2N4R), P301S mutant preformed fibrils (PFFs). Fibrils were sonicated and stained with uranyl acetate.



Thioflavin T is a fluorescent dye that binds to beta sheet-rich structures such as those in tau 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 tau aggregation) when tau preformed fibrils (SPR-329) are combined with tau monomers (SPR-327). The preformed fibrils seed the formation of new fibrils from a pool of monomers. Thioflavin T $\text{ex} = 450 \text{ nm}$, $\text{em} = 485 \text{ nm}$.



SDS-PAGE of ~67 kDa Human Tau Protein 2N4R P301S Preformed Fibrils (SPR-329). Lane 1: MW Ladder. Lane 2: Tau Protein Preformed Fibrils (SPR-329)