

# Tau Protein

Active Human Recombinant Tau441 (2N4R),  
P301S mutant Protein Monomer  
Catalog No. SPR-327



Discovery through partnership | Excellence through quality



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## Product Name

Tau Protein

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## Description

Active Human Recombinant Tau441 (2N4R), P301S mutant Protein Monomer

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## Applications

WB, SDS-PAGE, In vivo assay, In vitro assay

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## Concentration

Lot/batch specific. See included datasheet.

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## Conjugates

No tag

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## Nature

Recombinant

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## Species

Human

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## Expression System

E. coli

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## Amino Acid Sequence

MAEPRQEFEV MEDHAGTYGL GDRKDQGGYT MHQDQEGDTD AGLKESPLQT PTEDGSEEPG SETSDAKSTP TAED  
VTAPLV DEGAPGKQAA AQPHTIPEG TTAEEAGIGD TPSLEDEAAG HVTQARMVSK SKDGTGSDDK KAKGADGKTK  
IATPRGAAPP GQKGQANATR IPAKTPPAPK 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

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## Protein Length

Full Length

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## Biological Activity

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

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## Field Of Use

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

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## Properties

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### Storage Buffer

10 mM HEPES, 100 mM NaCl pH 7.4

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### Storage Temperature

-80°C

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### Shipping Temperature

Dry Ice. Shipping note: Product will be shipped separately from other products purchased in the same order.

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### Purification

Ion-exchange Purified

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### Specificity

~45.8 kDa

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### Cite This Product

Human Recombinant Tau Protein (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SPR-327)

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## Biological Description

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### Alternative Names

Active tau monomer, active tau protein monomer, active tau protein, 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

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### Research Areas

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

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### **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

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### **Accession Number**

NP\_005901.2

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### **Gene ID**

4137

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### **Swiss Prot**

P10636

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### **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).

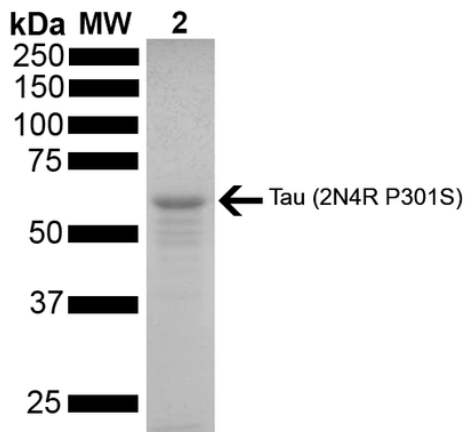
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### **References**

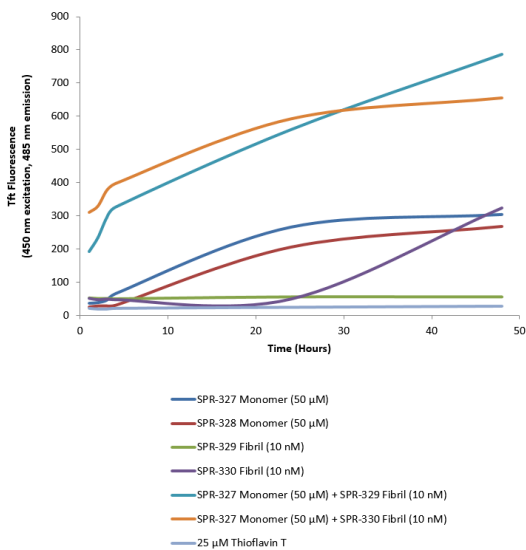
1. [www.alz.org/alzheimers-dementia/facts-figures](http://www.alz.org/alzheimers-dementia/facts-figures)
  2. Alzheimer, A. Über eine eigenartige Erkrankung der Hirnrinde. *Allg. Z. Psychiatr. Psych.-Gerichtl. Med.* 64, 146–148 (1907)
  3. Matsumoto, G. et al. (2018). *Int J Mol Sci.* 19, 1497.
  4. 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**

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SDS-PAGE of ~67 kDa Human Tau Protein 2N4R P301S Monomer (SPR-327). Lane 1: MW ladder. Lane 2: Tau Protein Monomer (SPR-327)



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) over time in tau monomers (SPR-327). A greater increase in fluorescence is seen when 50 uM monomer (SPR-327) is combined with 10 nM PFFs (SPR-329 or SPR-330), as the fibrils seed the formation of new fibrils from the pool of monomers. Thioflavin T ex = 450 nm, em = 485 nm.