

Product Information Sheet

Product Name:	Recombinant Human Tau (Tau-441) Protein
Catalog Number:	AS-55556
Lot Number:	See label on the vial
Amount/size:	50 µg, 100 µg
Source:	The sequence (Accession # AAC04279.1) corresponding to the full length human Tau-441 (2N4R isoform) protein along with GST tag was expressed in <i>E. coli</i> . The recombinant Tau-441 protein was purified from bacterial lysate using proprietary method. GST tag was cleaved and removed using Glutathione agarose.
Molecular Mass:	45.8 kDa.
Activity:	Tau-441 was assayed for <i>in vitro</i> phosphorylation using GSK-3β kinase.
Applications:	In vitro phosphorylation and acetylation, Western Immunoblotting and ELISA standard.
Purity:	Greater than 90% as determined by SDS-PAGE.
Storage:	The purified Tau-441 is supplied as lyophilized powder from phosphate buffered saline (pH 7.4). Store at 2-4 °C for immediate use within 1-2 weeks or at -80 °C for long-term storage.

Instructions:

Microtubule associated protein (Tau) is found predominantly in the central neural system and its major function is to promote assembly and to stabilize neuronal microtubules.¹⁻⁵ Six isoforms of Tau were identified in humans that are differentiated by the exclusion or inclusion of exons 2, 3, and 10.²⁻⁵ Tau-441 is the longest of Tau isoforms that consists of 441 amino acids with molecular mass of 45.8 kDa.

Under physiological conditions Tau can undergo abnormal phosphorylation, truncation, or other modifications that result in the protein detachment from microtubules.¹⁻⁵ These modified Tau molecules can self-associate and form different types of aggregates including neurofibrillary tangles (NFTs) found in brains of patients with neurodegenerative diseases such as Alzheimer's disease.¹⁻⁵

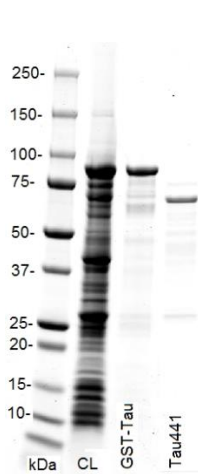


Figure 1.

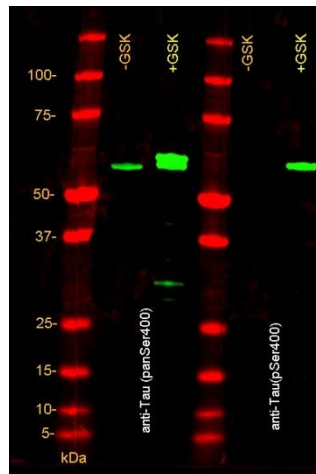


Figure 2.

Figure 1. Human Tau-441 on SDS-PAGE.

Purified protein was loaded onto 10-20% Tris-HCl gel at 2 µg/well. CL=unpurified cell lysate, GST-Tau=purified GST-Tau fusion protein, Tau441=purified Tau without GST tag.

Figure 2. Western Immunoblot of *in vitro* phosphorylated Tau-441 protein with human GSK-3β.

Purified Tau-441 was incubated with human GSK-3β at 40:1 ratio in the kinase assay buffer (25mM MOPS, 12.5mM β-glycerolphosphate, 25mM MgCl₂, 5mM EGTA, 2mM EDTA, 0.25mM DTT, 4mM ATP, pH=7.2) for 30 minutes at 30°C.

Phosphorylated Tau-441 (+GSK) and unphosphorylated Tau-441(-GSK) were resolved on 10-20% Tris gel at 1.25 µg/lane and transferred onto nitrocellulose membrane. Proteins were probed with anti-Tau (paired 396,400, 404) and phosphospecific anti-Tau(pSer400) antibodies at 0.75µg/ml (AnaSpec Cat.#54979 and Cat.#54978 respectively).



Related Products

Product Name	Cat. #
<u>Anti-Tau (pSer400) Antibody</u>	AS-54978
<u>Anti-Tau (paired 393-411) Antibody</u>	AS-54979
Recombinant Human GST-Tau (GST-Tau-441) Protein	AS-55557

References:

1. Bulic B., et al., *Neuropharmacology* **59**: 276-289 (2010).
2. Voss K., et al., *Mol. Neurodegen.* **4** (18) : 1-12 (2009).
3. Rankin C.A., et al., *Mol. Neurodegen.* **2 (12)** : 1-14 (2007).
4. Patterson K. R., et al., *J. of Biol. Chem.* 286 (26) : 23063-23076 (2011).
5. Wang Y., et al., *Biochem. Soc. Trans.* 38 : 955-961 (2010)

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