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## DATA SHEET

**Product Name:** Tau-441 (2N4R) R406W Mutant, Human, Recombinant, E. coli

**Catalog #:** T-1011

**Source:** Recombinant, in E. coli. No his-tag.

**Molecular Mass:** 45.93 kDa

**Protein Purity:** >90% by SDS-PAGE.

**Counter Ion:** Final buffer: 100mM PIPES, pH 6.9, 2mM EGTA, 1mM MgSO<sub>4</sub>, 1mM DTT.

**Supplied As:** Lyophilized powder

**Resuspension:** Resuspend in water at conc. of 1 mg/ml. This will give you a final of 100mM PIPES, pH 6.9; 2mM EGTA, 1 mM MgSO<sub>4</sub> and 1mM DTT.

**Storage:** -20°C

**Description:** Tau is a family of six isoforms, derived from a single gene by alternative mRNA splicing<sup>1</sup>. They vary in size from 352 to 441 amino acids (36.8 to 45.9 kDa), and differ from one another in having three or four microtubule binding repeats (R) of 31-32 amino acids each, and two, one or none amino terminal inserts (N) of 29 amino acids each<sup>2</sup>.

<u>Catalog #</u>	<u>Product</u>	<u>Variant</u>	<u>Exon 2</u>	<u>Exon 3</u>	<u>Exon 10</u>	<u>AA</u>	<u>Mass (kDa)</u>	<u>Expressed</u>
<b>T-1001-1</b>	<b>Tau-441</b>	2N4R	+	+	+	441	45.9	adult
<b>T-1002-1</b>	<b>Tau-410</b>	2N3R	+	+	-	410	42.6	adult
<b>T-1003-1</b>	<b>Tau-412</b>	1N4R	+	-	+	412	42.9	adult
<b>T-1004-1</b>	<b>Tau-381</b>	1N3R	+	-	-	381	39.7	adult
<b>T-1005-1</b>	<b>Tau-383</b>	0N4R	-	-	+	383	40	adult
<b>T-1006-1</b>	<b>Tau-352</b>	0N3R	-	-	-	352	36.8	fetal

Tau promotes the assembly and maintains the structure of microtubules in neuronal cells<sup>3,4,5</sup>. While the fetal brain contains a single isoform of tau (Tau-352) the adult brain has several isoforms. Tau is both phosphorylated and O-GlcNAcylated<sup>6</sup>. The normal brain tau contains 2-3 moles of phosphate/mole of the protein. In Alzheimer disease tau is hyperphosphorylated, containing 3-4-fold more phosphate/mole of the protein than the normal tau<sup>7,8</sup> and is the major protein subunit of paired helical filaments (PHF) that form the neurofibrillary tangles (NFT). NFT accumulation correlates with the clinical progression of Alzheimer's disease.

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<u>Catalog #</u>	<u>Product</u>	<u>Mutation</u> <sup>9</sup>	<u>AA</u>	<u>Mass (kDa)</u>	<u>Size ug</u>	<u>Price USD</u>
T-1011-1	Tau-441 (2N4R), R406W mutant	FTDP17	441	45.93	50	\$300
T-1011-2	Tau-441 (2N4R), R406W mutant				100	\$550
T-1012-1	Tau-441 (2N4R), V337M mutant	FTDP17	441	45.93	50	\$300
T-1012-2	Tau-441 (2N4R), V337M mutant				100	\$550
T-1013-1	Tau-441 (2N4R), G272V mutant	FTDP17	441	45.94	50	\$300
T-1013-2	Tau-441 (2N4R), G272V mutant				100	\$550
T-1014-1	Tau-441 (2N4R), P301L mutant	FTDP17	441	45.92	50	\$300
T-1014-2	Tau-441 (2N4R), P301L mutant				100	\$550

The discovery of close to 20 different mutations in the gene encoding the microtubule-associated protein tau in frontotemporal dementia and parkinsonism linked to chromosome 17 (FTDP-17) has shown that dysfunction of tau protein causes neurodegeneration and dementia<sup>9</sup>.

**References:**

1. Himmler, et. al., 1989, Mol Cell Biol. **9**, 1381
2. Goedert, M., et. al. 1989, Neuron. **3**, 519.
3. Avila J. et. al., 2004, Physiol Rev. **84**, 361.
4. Goedert, M., 1993, Trends Neurosci. **16**, 460.
5. Mandelkow, E. et al. 1996, Ann N Y Acad Sci. **777**, 96.
6. Liu, F., et. al., 2004, Proc. Natl. Acad. Sci. U.S.A. **101**, 10804.
7. Iqbal, K., et. al., 1986, Lancet **2**, 421.
8. Kopke, et. al., 1993, J. Biol. Chem. **268**, 2437
9. Spillantini, M.G. et. al., 2000, Neurogenetics, **2**, 193.

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