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## DATA SHEET

**Product Name:** Tau-412 (1N4R), Human, Recombinant, E. coli

**Catalog #:** T-1003

**Source:** Recombinant. DNA sequence encoding the human Tau-412 isoform (1N4R) sequence was expressed in E. coli. No his-tag.

**Sequence:** MAEPRQEFEV MEDHAGTYGL GDRKDQGGYT MHQDQEGDTD AGLKESPLQT  
PTEDGSEEPG SETSDAKSTP TAEAEAEAGIG DTPSLEDEAA GHVTQARMVS  
KSKDGTGSDD KKAKGADGKT KIATPRGAAP PGQKGQANAT RIPAKTPPAP  
KTPPSSGEPP KSGDRSGYSS PGSPGTPGSR SRTPSLPTPP TREPKKVAVV  
RTPPKSPSSA KSRLQTAPVP MPDLKNVSK IGSTENLKHQ PGGGKVQIIN  
KKLDLSNVQS KCGSKDNIKH VPGGGSVQIV YKPVDSLKVT SKCGSLGNIH  
HKPGGGQVEV KSEKLDKDR VQSKIGSLDN ITHVPGGGNK KIETHKLTR  
ENAKAKTDHG AEIVYKSPVV SGDTSRHLN NVSSTGSIDM VDSPQLATLA  
DEVSASLAKQ GL

**pI 8.96**

**Molecular Mass:** 42,900

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

**Counter Ion:** Lyophilized in final buffer of 50mM MES, pH 6.8, 100 mM NaCl and 0.5 mM EGTA

**Supplied As:** White lyophilized powder

**Resuspension:** Resuspend in water at conc. of 1 mg/ml. This will give you a final of 50mM MES, pH 6.8, 100 mM NaCl, 0.5 mM EGTA.

**Storage:** -20<sup>0</sup>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>.

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<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.

**References:**

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