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DATA SHEET

Product Name: Tau-441 (2N4R) P301L Mutant, Human, Recombinant, E. coli

Catalog #: T-1014

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

Molecular Mass: 45.92 kDa

Protein Purity: >90% by SDS-PAGE.

Counter Ion: Final buffer: 100mM PIPES, pH 6.9, 2mM EGTA, 1mM MgSO₄, 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 MgSO₄ and 1mM DTT.

Storage: -20⁰C

Description: Tau is a family of six isoforms, derived from a single gene by alternative mRNA splicing¹. 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 each².

<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>
T-1001-1	Tau-441	2N4R	+	+	+	441	45.9	adult
T-1002-1	Tau-410	2N3R	+	+	-	410	42.6	adult
T-1003-1	Tau-412	1N4R	+	-	+	412	42.9	adult
T-1004-1	Tau-381	1N3R	+	-	-	381	39.7	adult
T-1005-1	Tau-383	0N4R	-	-	+	383	40	adult
T-1006-1	Tau-352	0N3R	-	-	-	352	36.8	fetal

Tau promotes the assembly and maintains the structure of microtubules in neuronal cells^{3,4,5}. While the fetal brain contains a single isoform of tau (Tau-352) the adult brain has several isoforms. Tau is both phosphorylated and O-GlcNAcylated⁶. 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^{7,8} 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> ⁹	<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 dementia⁹.

References:

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