DATA SHEET

Product Name:  Tau-381 (1N3R), Human, Recombinant, E. coli
Catalog #:  T-1004
Source:  Recombinant. DNA sequence encoding the human Tau-381 isoform (1N3R) sequence was expressed in E. coli. No his-tag.
Molecular Mass:  39,700
Protein Purity:  >90% by SDS-PAGE.
Counter Ion:  Final buffer: 50mM MES, pH 6.8, 100 mM NaCl, 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°C

Description:  Tau is a family of six isoforms, derived from a single gene by alternative mRNA splicing\(^1\). 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\(^2\).

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Product</th>
<th>Variant</th>
<th>Exon 2</th>
<th>Exon 3</th>
<th>Exon 10</th>
<th>AA</th>
<th>Mass (kDa)</th>
<th>Expressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-1001-1</td>
<td>Tau-441</td>
<td>2N4R</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>441</td>
<td>45.9</td>
<td>adult</td>
</tr>
<tr>
<td>T-1002-1</td>
<td>Tau-410</td>
<td>2N3R</td>
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<td>+</td>
<td>-</td>
<td>410</td>
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<tr>
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<td>1N4R</td>
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<td>+</td>
<td>412</td>
<td>42.9</td>
<td>adult</td>
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<tr>
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<td>1N3R</td>
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<td>-</td>
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<tr>
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<td>0N4R</td>
<td>-</td>
<td>-</td>
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<tr>
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<td>0N3R</td>
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<td>-</td>
<td>-</td>
<td>352</td>
<td>36.8</td>
<td>fetal</td>
</tr>
</tbody>
</table>

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-GlcNAcylated\(^6\). 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.
References:
1. Himmler, et. al., 1989, Mol Cell Biol. 9, 1381
3. Avila J. et. al., 2004, Physiol Rev. 84, 361.
8. Kopke, et. al., 1993, J. Biol. Chem. 268, 2437

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