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. 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. 

<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>
<td>+</td>
<td>+</td>
<td>-</td>
<td>410</td>
<td>42.6</td>
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<tr>
<td>T-1003-1</td>
<td>Tau-412</td>
<td>1N4R</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>412</td>
<td>42.9</td>
<td>adult</td>
</tr>
<tr>
<td>T-1004-1</td>
<td>Tau-381</td>
<td>1N3R</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>381</td>
<td>39.7</td>
<td>adult</td>
</tr>
<tr>
<td>T-1005-1</td>
<td>Tau-383</td>
<td>0N4R</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>383</td>
<td>40</td>
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<tr>
<td>T-1006-1</td>
<td>Tau-352</td>
<td>0N3R</td>
<td>-</td>
<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. 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. 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 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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