Tau 4-repeat domain, human recombinant, expressed in *E. coli*

**Catalog Number** T9830  
**Storage Temperature** –20 °C

**Product Description**

Tau is a family of neuronal microtubule-associated proteins. Tau promotes microtubule assembly and stabilizes neuronal microtubules under physiological conditions. Under pathological conditions, tau proteins undergo conformational changes and aggregate into paired helical filaments (PHFs), core constituents of the neurofibrillary tangles found in tauopathies,\(^1\,^2\) neurodegenerative diseases resulting from the aggregation of tau proteins in the brain. The best known of these diseases is Alzheimer’s disease.

The tau proteins are the products of alternative splicing from a single gene that in humans is designated *MAPT* (microtubule-associated protein tau). Alternative splicing of exons 2, 3, and 10 produces six tau isoforms (see Table 1 and Figure 1).\(^2\,^3\) Three of them (isoforms 441, 412, and 383) contain a domain with four repeats, a result of inclusion of alternatively spliced exon 10. The other three (isoforms 410, 381, and 352) contain a domain with only three repeats in which the second repeat encoded by exon 10 is spliced out. The repeat domains, located at the carboxyl-terminal half of Tau, are believed to be important for microtubule binding as well as for the pathological aggregation of tau into PHFs.\(^1\,^2\)

Tau 4-repeat domain is lyophilized from a solution of 20 mM sodium phosphate, pH 7.4, and 1 mM DTT.

Preparation Instructions

Reconstitution in sterile water to a protein concentration of 1 mg/ml, results in a solution of –20 mM sodium phosphate, pH 7.4.

**Storage/Stability**

The lyophilized product and reconstituted solutions should be stored at –20 °C or below. Repeated freezing and thawing is not recommended. Storage in “frost-free” freezers is not recommended.

Diluted working samples should be kept on ice and discarded if not used within 12 hours.

**References**

Table 1.
Comparison of Tau Products

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<th>Catalog Number</th>
<th>Description</th>
<th>Variant</th>
<th>Exon 2</th>
<th>Exon 3</th>
<th>Exon 10</th>
<th>Number of Amino Acids</th>
<th>Mass (kDa)</th>
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<td>–</td>
<td></td>
<td>+</td>
<td>130</td>
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<td>352</td>
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Figure 1.
Tau 4-repeat domain aligned with six Tau isoforms

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