Active Recombinant Full Length Human Tau-441 Protein, phosphorylated

Cat. No. Tau-441-58HFL **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Our phosphorylated Tau-441 (phosphorylated) is expressed in E.coli. It is a Tag-Free full-length human Tau protein (2N4R) composed of a total of 441 amino acids and has been phosphorylated by an in vitro enzymatic method. Phosphorylation ratio (at position 181): ≥ 50% Phosphorylation ratio (at position 217): ≥ 20% Phosphorylation ratio (at position 231): ≥ 90%
Species	Human
Source	E.coli
Description	Tau protein is one of the microtubule-associated proteins that has the highest content in the relevant cellular context. In the normal brain, the cellular function of Tau protein is to bind to tubulin, promoting its polymerization to form microtubules, and then bind to the formed microtubules to maintain the stability of microtubules, reducing the dissociation of tubulin molecules, and ultimately inducing the bundling of microtubules. In normal individuals, due to different mRNA splicing patterns of Tau protein, six isoforms can be expressed. Tau protein is a phosphorylated protein. In the normal mature brain, each Tau protein molecule contains 2 to 3 phosphate groups. However, in the brains of patients with Alzheimer's disease (senile dementia), the Tau protein is abnormally and excessively phosphorylated. Each Tau protein molecule can contain 5 to 9 phosphate groups and loses its normal biological functions. Tau proteins with different phosphorylation sites all have the potential to become diagnostic markers for AD. The latest draft of the AD diagnostic guidelines

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	released at the Alzheimer's Association International Conference in 2023 designated p-Tau181 and p-Tau217 in plasma as the core biomarkers for AD.
Purity	≥ 90% by SDS-PAGE
Advantages	Based on the GSK3beta kinase developed through a unique expression and downstream process system, we can achieve the phosphorylation of specific sites of the recombinant human Tau-441 protein to a high degree and with high specificity, and the phosphorylation ratio of certain key sites is even higher. For example, we have successful project experiences in achieving a high phosphorylation rate at specific sites such as p-Tau181, p-Tau217 and p-Tau231.
Applications	1. Investigate the impact of phosphorylated Tau protein on the neuropathological changes in Alzheimer's disease. 2. Examine the effect of phosphorylated Tau protein on the mitochondrial transport speed in glial cells. 3. Standard substance for the detection of phosphorylated Tau protein.
Note	1. Try to avoid freeze-thaw cycles of this product after receipt; 2. Please wear lab coat and disposable gloves when using; 3. This product should not be used directly for clinical diagnosis and treatment.
Stability	This product should be stored at -20 centigrade and can be stored for at least 12 months.
Storage	Store at -20 centigrade.
Storage Buffer	50mM Tris, 150mM NaCl, 0.25mM DTT, 25% Glycerol, pH=7.5
Concentration	≥ 1.0 mg/mL

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Shipping	Dry ice

GENE INFORMATION

Gene Name	MAPT microtubule associated protein tau [Homo sapiens (human)]
Official Symbol	Tau-441
Synonyms	MAPT; microtubule associated protein tau; TAU; FTD1; MSTD; PPND; DDPAC; MAPTL; MTBT1; MTBT2; tau-40; FTDP-17; PPP1R103; Tau-PHF6; Tau-441; microtubule-associated protein tau; G protein beta1/gamma2 subunit-interacting factor 1; PHF-tau; Tau-derived paired helical filament hexapeptide; neurofibrillary tangle protein; paired helical filament-tau; protein phosphatase 1, regulatory subunit 103
Gene ID	4137
mRNA Refseq	NM_016835
Protein Refseq	NP_058519
MIM	157140
UniProt ID	P10636

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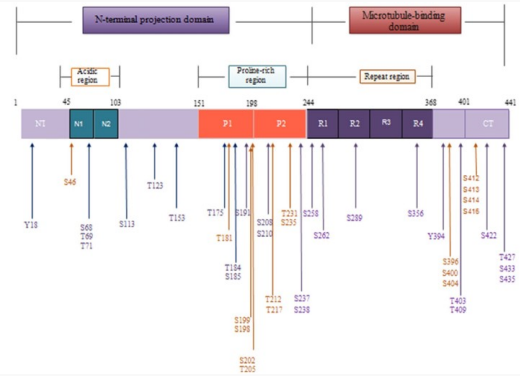
Phosphorylated residues in AD	

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