



# Tau (Tau Protein, Microtubule-associated Protein, MAP)

## Catalog number

T1030-02A

## Supplier

United States Biological

Tau is a microtubule-associated phosphoprotein (MAP), localized in neuronal axons. It promotes tubulin polymerization and stabilizes microtubules. Tau proteins constitute a family of six isoforms, which ranging from 352 to 441 amino acids. The tau variants differ from each other by the presence of either three or four repeat-regions in the carboxy-terminal part of the molecule and the absence or presence of one or two inserts in the amino-terminal portion.

Tau is hyperphosphorylated by ERK, GSK-3, TPKII, and CDK5. At least thirty phosphorylation sites have been described, including Thr39, Ser46, Thr50, Thr69, Thr153, Thr175, Thr181, Ser198, Ser199, Ser202, Thr205, Ser208, Ser210, Thr212, Ser214, Thr217, Thr231, Ser235, Ser237, Ser241, Ser262, Ser285, Ser305, Ser324, Ser352, Ser356, Ser396, Ser400, Thr403, Ser404, Ser409, Ser412, Ser413, Ser416, and Ser422. Specifically, TPKII phosphorylates serines 202 and 404. GSK-3 $\beta$  transfection phosphorylates serines 199, 202, 235, 396, 404, and 413, and threonines 205 and 231. These sites are among the major abnormal phosphorylation sites of Tau. Phosphorylation on these sites reduces the ability of a given Tau species to promote microtubule self-assembly. Hyperphosphorylated Tau is the major protein of the paired helical filaments (PHFs), which make up the pathological neurofibrillary tangles of Alzheimer's disease (AD). The PHFs are also found in the lesions of other central nervous system disorders.

## Applications

Suitable for use in ELISA and Western Blot. Other applications not tested.

## Recommended Dilution

ELISA: 0.05-0.2 $\mu$ g/ml

Western Blot: 0.1-1 $\mu$ g/ml

Optimal dilutions to be determined by the researcher.

## Storage and Stability

For long-term storage, aliquot and store at -20°C. Aliquots are stable for at least 12 months at -20°C. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. Further dilutions can be made in assay buffer.

## Immunogen

Synthetic peptide (KLH). corresponding to residues surrounding threonine 217 of human Tau

## Formulation

Supplied as a liquid in PBS, pH 7.4, 0.02% sodium azide, 30% glycerol.

## Purity

Purified by immunoaffinity chromatography.

## Specificity

Recognizes endogenous levels of total Tau protein.

**Product Type**

Pab

**Source**

human

**Isotype**

IgG

**Grade**

Affinity Purified

**Applications**

E WB

**Crossreactivity**

Hu Mo

**Storage**

-20°C

**Reference**

1. Haque, N., et al. (1999) Brain Res. 838: 69-77. 2. L Buee et al. (2000) Brain Res Brain Res Rev, 33(1):95-130. 3. G.V.Johnson et al. (2004) J. Cell Sci. 117: 5721-5729.