

# Phospho-Tau (Ser199) Antibody



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	50-80	Rabbit	#P10636-8	4137

## Product Usage Information

### Application

Western Blotting

### Dilution

1:1000

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

## Specificity/Sensitivity

Phospho-Tau (Ser199) Antibody recognizes endogenous levels of Tau protein only when phosphorylated at Ser199. This antibody also detects a 110 kDa band of unknown origin.

## Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser199 of human Tau protein. Antibodies are purified by protein A and peptide affinity chromatography.

## Background

Tau is a heterogeneous microtubule-associated protein that promotes and stabilizes microtubule assembly, especially in axons. Six isoforms with different amino-terminal inserts and different numbers of tandem repeats near the carboxy terminus have been identified, and tau is hyperphosphorylated at approximately 25 sites by Erk, glycogen synthase kinase-3 (GSK-3), and CDK5 (1,2). Phosphorylation decreases the ability of tau to bind to microtubules. Neurofibrillary tangles are a major hallmark of Alzheimer's disease (AD); these tangles are bundles of paired helical filaments (PHFs) composed of hyperphosphorylated tau. In particular, phosphorylation at Ser396 by GSK-3 or CDK5 destabilizes microtubules. Furthermore, research studies have shown that inclusions of tau are found in a number of other neurodegenerative diseases, collectively known as tauopathies (1,3).

Ser199 of Tau is phosphorylated by various kinases such as GSK-3 $\beta$ , AMP-activated protein kinase (AMPK), and dual specificity tyrosine-phosphorylation-regulated kinase 1A (Dyrk1A) (4-7). Phosphorylation of Ser199 of Tau is an early event in the pathogenesis of Alzheimer's disease (8,9).

## Background References

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2. Hanger, D.P. et al. (1998) *J Neurochem* 71, 2465-76.
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4. Qian, W. et al. (2010) *J Alzheimers Dis* 19, 1221-9.
5. Leroy, A. et al. (2010) *J Biol Chem* 285, 33435-44.
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7. Jin, N. et al. (2015) *J Biol Chem* 290, 15219-37.
8. Mondragón-Rodríguez, S. et al. (2008) *Neuropathol Appl Neurobiol* 34, 62-75.
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## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**W:** Western Blotting

## Cross-Reactivity Key

**H:** Human **M:** Mouse **R:** Rat

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