Store at -20°C

#11837

Phospho-Tau (Ser400/Thr403/Ser404) Antibody

100 µl (10 western blots)

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Entrez-Gene ID #4137
UniProt ID #P10636-8

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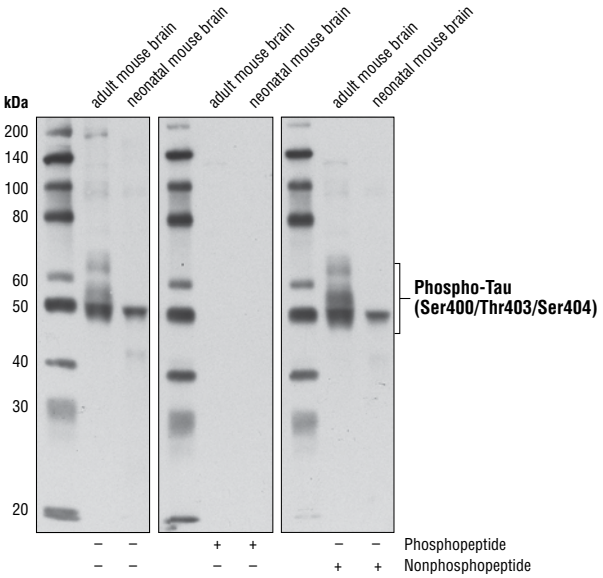
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W Endogenous	H, M, R	50-80 kDa	Rabbit**

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, 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; these tangles are bundles of paired helical filaments 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).

Investigators have shown that tau phosphorylation at Ser404 destabilizes microtubules and that tau is hyperphosphorylated at Ser404 in Alzheimer's disease (4-7).

Specificity/Sensitivity: Phospho-Tau (Ser400/Thr403/Ser404) Antibody recognizes endogenous levels of tau protein when phosphorylated at Ser400 or Thr403 or Ser404. This antibody also detects dual phosphorylation at Ser400/Thr403, Ser400/Ser404, or Thr403/Ser404, and triple phosphorylation at Ser400/Thr403/Ser404.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser400/Thr403/Ser404 of human tau protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from adult and neonatal mouse brain using Phospho-Tau (Ser400/Thr403/Ser404) Antibody. The phospho-specificity of the antibody was verified by blocking with a Ser400/Thr403/Ser404 phosphopeptide (middle panel) or a nonphosphopeptide (right panel).

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.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000

Background References:

(1) Johnson , G.V. and Stoothoff , W.H. (2004) *J. Cell Sci.* 117, 5721-5729.

(2) Hanger, D. P. et al. (1998) *J. Neurochem.* 71, 2465-2476.

(3) Bramblett, G. T. et al. (1993) *Neuron* 10, 1089-1099.

(4) Shiurba, R.A. et al. (1996) *Brain Res* 737, 119-32.

(5) Hanger, D.P. et al. (1998) *J Neurochem* 71, 2465-76.

(6) Evans, D.B. et al. (2000) *J Biol Chem* 275, 24977-83.

(7) Bertrand, J. et al. (2010) *Neuroscience* 168, 323-34.

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

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