Phospho-Tau (Ser199) Antibody

For Research Use Only. Not For Use In Diagnostic Procedures.

Applications: W—Western  IP—Immunoprecipitation  IHC—Immunohistochemistry  ChIP—Chromatin Immunoprecipitation

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

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com

Background References:

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 carboxyl terminus have been identified, and tau is hyperphosphorylated at approximately 25 sites by Erk, GSK-3, and CDKS (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 CDKS 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-3β, 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).

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.

Source:
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Applications: W—Western  IP—Immunoprecipitation  IHC—Immunohistochemistry  ChIP—Chromatin Immunoprecipitation  IF—Immunofluorescence  F—Flow cytometry  E—ELISA-Peptide  Species Cross-Reactivity: H—human  M—mouse  R—rat  Hm—hamster  Mm—monkey  Mm—mink  C—chicken  Dm—D. melanogaster  X—Xenopus  Z—zebrafish  B—bovine  Dg—dog  Pg—pig  Se—S. cerevisiae  Ce—C. elegans  Hr—Horse  All—all species expected. Species enclosed in parentheses are predicted to react based on 100% homology.

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

Western blot analysis of extracts from mouse and rat brain using Phospho-Tau (Ser199) Antibody. The phospho-specificity of Phospho-Tau (Ser199) Antibody was verified by peptide blocking using a phosphopeptide or non-phosphopeptide targeting residue Ser199.

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