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Phospho-Tau Family Antibody Sampler Kit

#96628

Cell Signaling TECHNOLOGY®

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Products Included	Product #	Quantity	Mol. Wt.	Isotype
Tau (D1M9X) XP® Rabbit mAb	46687	20 µl	50-80 kDa	Rabbit IgG
Phospho-Tau (Ser404) (D2Z4G) Rabbit mAb	20194	20 µl	50-80 kDa	Rabbit IgG
P-Tau (S416) (D7U2P) Rabbit mAb	15013	20 µl	50-80 kDa	Rabbit IgG
P-Tau (S202) (D4H7E) Rabbit mAb	39357	20 µl	50-80 kDa	Rabbit IgG
P-Tau (S396) (PHF13) Mouse mAb	9632	20 µl	50-80 kDa	Mouse IgG2b
Phospho-Tau (Ser404) (D2Z4G) Rabbit mAb (IHC Formulated)	35834	20 µl	50-80 kDa	Rabbit IgG
Anti-mouse IgG, HRP-linked Antibody	7076	100 µl		Horse
Anti-Rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

See www.cellsignal.com for individual component applications, species cross-reactivity, dilutions and additional application protocols.

Description: The Phospho-Tau Family Antibody Sampler Kit provides an economical means of detecting the activation of Tau family members using phospho-specific and control antibodies. The kit includes enough antibody to perform two western blot experiments with each primary antibody.

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). Research studies indicate that calcium-/calmodulin-dependent protease kinase II (CAM-kkinase II) is responsible for the phosphorylation of Tau at Ser416. Phosphorylated Tau protein is localized with neuronal soma or hippocampal neurons and immortalized GnRH neurons (8). Investigators have shown that Tau is phosphorylated during development and hyperphosphorylated at Ser202 in Alzheimer's disease (9).

Specificity/Sensitivity: Each antibody in the Phospho-Tau Family Antibody Sampler Kit detects endogenous levels of this target protein. Tau (D1M9X) XP® Rabbit mAb recognizes endogenous levels of total Tau protein. Phospho-Tau (Ser404) (D2Z4G) Rabbit mAb recognizes endogenous levels of Tau protein when phosphorylated at Ser404. This antibody detects single phosphorylation at Ser404, dual phosphorylation at Ser400/Thr403/Ser404. This antibody does not detect peptides with single phosphorylation at Ser400 or Thr403. Phospho-Tau (Thr181) (D9F4G) Rabbit mAb recognizes endogenous levels of Tau protein only when phosphorylated at Thr181. Phospho-Tau (Ser202) (D4H7E) Rabbit mAb recognizes endogenous levels of Tau protein only when phosphorylated at Ser202. Phospho-Tau (Ser396) (PHF13) Mouse mAb recognizes endogenous levels of Tau protein only when

Source/Purification: Monoclonal antibodies are produced by immunizing rabbits with synthetic peptides corresponding to residues surrounding Asp430 of human Tau. Phosphorylation-specific monoclonal antibodies are produced by immunizing animals with synthetic peptides corresponding to Ser400/Thr403/Ser404, Thr181, Ser202, Ser416 Tau, and Ser396 with human purified Tau (Hoffmann et al., 1997 -PMID 9201960).

Background References:

(1) Johnson, G.V. and Stoothoff, W.H. (2004) *J Cell Sci* 117, 5721-9.
(2) Hanger, D.P. et al. (1998) *J Neurochem* 71, 2465-76.
(3) Bramblett, G.T. et al. (1993) *Neuron* 10, 1089-99.
(4) Hanger, D.P. et al. (1998) *J Neurochem* 71, 2465-76.
(5) Shiurba, R.A. et al. (1996) *Brain Res* 737, 119-32.
(6) Evans, D.B. et al. (2000) *J Biol Chem* 275, 24977-83.
(7) Bertrand, J. et al. (2010) *Neuroscience* 168, 323-34.
(8) Yamamoto, H. et al. (2005) *J Neurochem* 94, 1438-47.
(9) Goedert, M. et al. (1993) *Proc Natl Acad Sci U S A* 90, 5066-70.

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