

Phospho-Tau (Ser404) (D2Z4G) Rabbit mAb

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

Product Usage Information**Application**

Western Blotting
Immunoprecipitation
Immunofluorescence (Frozen)
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:50
1:800 - 1:1600
1:800 - 1:1600

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

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/Ser404 or Thr403/Ser404, and triple phosphorylation at Ser400/Thr403/Ser404. This antibody does not detect peptides with single phosphorylation at Ser400 or Thr403, and dual phosphorylation at Ser400/Thr403.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser400/Thr403/Ser404 of human Tau protein.

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).

Investigators have shown that tau phosphorylation at Ser404 destabilizes microtubules and that tau is hyperphosphorylated at Ser404 in Alzheimer's disease (2,4-6).

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. Shiurba, R.A. et al. (1996) *Brain Res* 737, 119-32.
5. Evans, D.B. et al. (2000) *J Biol Chem* 275, 24977-83.
6. Bertrand, J. et al. (2010) *Neuroscience* 168, 323-34.

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 BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-F:** Immunofluorescence (Frozen) **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

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

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