

Phospho-Tau (Ser46) 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 (Ser46) Rabbit Antibody recognizes endogenous levels of Tau protein only when phosphorylated at Ser46.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser46 of human Tau protein. Antibodies are purified by 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).

Phosphorylation of Tau at Ser46 is induced by different kinases, including GSK-3β (4), casein kinase-1 (5), and p38MAPK (6). Tau phosphorylation at Ser46 has been linked to different neurodegenerative diseases, including in PHF-Tau from Alzheimer's disease (4,6), Progressive Supranuclear Palsy (7), and synucleinopathies (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. Godemann, R. et al. (1999) *FEBS Lett* 454, 157-64.
5. Hanger, D.P. et al. (2007) *J Biol Chem* 282, 23645-54.
6. Duka, V. et al. (2013) *PLoS One* 8, e75025.
7. Wray, S. et al. (2008) *J Neurochem* 105, 2343-52.

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

Cross-Reactivity Key

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

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