Revision 1

Store at -20C

#14511

PhosphoPlus® Tau (Thr181) Antibody Duet

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
Phospho-Tau (Thr181) (D9F4G) Rabbit mAb	12885	100 µl	50-80 kDa	Rabbit IgG
Tau (D1M9X) XP® Rabbit mAb	46687	100 µl	50-80 kDa	Rabbit IgG

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

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.

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).

The cerebrospinal fluid concentration of Tau phosphorylated at Thr181 has been proposed to be a biomarker for the study of neurodegenerative disorders (4).

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. Mitchell, A.J. (2009) *J Neurol Neurosurg Psychiatry* 80, 966-75.

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