

# p-Tau (Ser 404): sc-12952



The Power to Question

## BACKGROUND

Tau, also known as MAPT (microtubule-associated protein tau), MAPTL, MTBT1 or TAU, is a 758 amino acid protein that localizes to the cytoplasm, as well as to the cytoskeleton and the cell membrane, and contains 4 Tau/MAPT repeats. Expressed in neuronal tissue and existing as multiple alternatively spliced isoforms, Tau functions to promote microtubule assembly and stability and is thought to be involved in the maintenance of neuronal polarity. Tau may also link microtubules with neural plasma membrane components and, in addition to its role in microtubule stability, is also necessary for cytoskeletal plasticity. Tau is highly subject to a variety of post-translational modifications, including phosphorylation on serine and threonine residues, polyubiquitination (and subsequent proteasomal degradation) and glycation of specific Tau isoforms. Defects in the gene encoding Tau are associated with Alzheimer's disease, pallido-ponto-nigral degeneration (PPND), corticobasal degeneration (CBD) and progressive supranuclear palsy (PSP).

## CHROMOSOMAL LOCATION

Genetic locus: MAPT (human) mapping to 17q21.31; Mapt (mouse) mapping to 11 E1.

## SOURCE

p-Tau (Ser 404) is available as either goat (sc-12952) or rabbit (sc-12952-R) affinity purified polyclonal antibody raised against a short amino acid sequence containing Ser 404 phosphorylated Tau of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12952 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-Tau (Ser 404) is recommended for detection of Ser 404 phosphorylated Tau of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-Tau (Ser 404) is also recommended for detection of correspondingly phosphorylated Tau in additional species, including canine.

Suitable for use as control antibody for Tau siRNA (h): sc-36614, Tau siRNA (m): sc-36615, Tau shRNA Plasmid (h): sc-36614-SH, Tau shRNA Plasmid (m): sc-36615-SH, Tau shRNA (h) Lentiviral Particles: sc-36614-V and Tau shRNA (m) Lentiviral Particles: sc-36615-V.

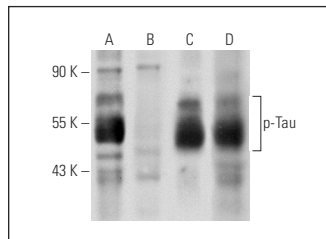
Molecular Weight of p-Tau: 46-80 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

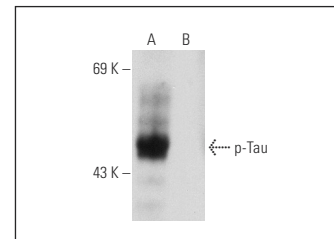
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



Western blot analysis of Tau phosphorylation in untreated (A, C) and lambda protein phosphatase treated (B, D) rat brain tissue extract. Antibodies tested include p-Tau (Ser 404)-R: sc-12952-R (A, B) and Tau (C-17): sc-1995 (C, D).



p-Tau (Ser 404): sc-12952. Western blot analysis of Tau phosphorylation in untreated (A) and lambda protein phosphatase treated (B) mouse brain tissue extract.

## SELECT PRODUCT CITATIONS

1. Wasilewska-Sampaio, A.P., et al. 2005. Neuritogenesis and neuronal differentiation promoted by 2,4-dinitrophenol, a novel anti-amyloidogenic compound. *FASEB J.* 19: 1627-1636.
2. MacLeod, D., et al. 2006. The familial Parkinsonism gene LRRK2 regulates neurite process morphology. *Neuron* 52: 587-593.
3. Ding, Y., et al. 2008. Retinoic acid attenuates  $\beta$ -amyloid deposition and rescues memory deficits in an Alzheimer's disease transgenic mouse model. *J. Neurosci.* 28: 11622-11634.
4. Zhao, K., et al. 2010. Neuron-selective toxicity of tau peptide in a cell culture model of neurodegenerative tauopathy: essential role for aggregation in neurotoxicity. *J. Neurosci. Res.* 88: 3399-3413.
5. Ding, Y., et al. 2010. Indirubin-3'-monoxime rescues spatial memory deficits and attenuates  $\beta$ -amyloid-associated neuropathology in a mouse model of Alzheimer's disease. *Neurobiol. Dis.* 39: 156-168.
6. Xian, Y.F., et al. 2012. Bioassay-guided isolation of neuroprotective compounds from *Uncaria rhynchophylla* against  $\beta$ -amyloid-induced neurotoxicity. *Evid. Based Complement Alternat. Med.* 2012: 802625.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.