

# p-Tau (Ser 515/Ser 516): sc-16923

## 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).

## REFERENCES

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- Singh, T.J., et al. 1996. Differential phosphorylation of human Tau isoforms containing three repeats by several protein kinases. *Arch. Biochem. Biophys.* 328: 43-50.
- Tashiro, K., et al. 1997. Somatodendritic localization of phosphorylated Tau in neonatal and adult rat cerebral cortex. *Neuroreport* 8: 2797-2801.
- Iqbal, K., et al. 1998. Mechanisms of neurofibrillary degeneration and the formation of neurofibrillary tangles. *J. Neural Transm. Suppl.* 53: 169-180.
- Zhong, J., et al. 1999. Hyperphosphorylated Tau in SY5Y cells: similarities and dissimilarities to abnormally hyperphosphorylated Tau from Alzheimer disease brain. *FEBS Lett.* 453: 224-228.
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- Hashiguchi, M., et al. 2000. 14-3-3 $\zeta$  is an effector of Tau protein phosphorylation. *J. Biol. Chem.* 275: 25247-25254.
- Taniguchi, T., et al. 2001. Phosphorylation of Tau is regulated by PKN. *J. Biol. Chem.* 276: 10025-10031.

## CHROMOSOMAL LOCATION

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

## SOURCE

p-Tau (Ser 515/Ser 516) is available as either goat (sc-16923) or rabbit (sc-16923-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 515 and Ser 516 phosphorylated Tau of human origin.

## RESEARCH USE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16923 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

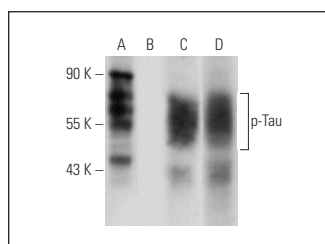
p-Tau (Ser 515/Ser 516) is recommended for detection of Ser 515 and Ser 516 dually phosphorylated Tau of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

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

## 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 515/516)-R: sc-16923-R (A, B) and Tau (C-17): sc-1995 (C, D).

## SELECT PRODUCT CITATIONS

- Sze, C.I., et al. 2004. Down-regulation of WW domain-containing oxidoreductase induces Tau phosphorylation *in vitro*. A potential role in Alzheimer's disease. *J. Biol. Chem.* 279: 30498-30506.

## STORAGE

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

## PROTOCOLS

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