SANTA CRUZ BIOTECHNOLOGY, INC.

p-Tau (PHF-6): sc-32276

SANTA CRUZ BIOTECHNOLOGY

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 four Tau/MAP 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 Alzheimers disease, pallido-ponto-nigral degeneration (PPND), corticobasal degeneration (CBD) and progressive supranuclear palsy (PSP).

REFERENCES

1. Hoshi, M., et al. 1996. Regulation of mitochondrial pyruvate dehydrogenase activity by Tau protein kinase I/glycogen synthase kinase 3 in brain. Proc. Natl. Acad. Sci. USA 93: 2719-2723.
2. 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.
3. Tashiro, K., et al. 1997. Somatodendritic localization of phosphorylated Tau in neonatal and adult rat cerebral cortex. Neuroreport 8: 2797-2801.

CHROMOSOMAL LOCATION

Genetic locus: MAPT (human) mapping to 17q21.31.

SOURCE

p-Tau (PHF-6) is a mouse monoclonal antibody raised against highly purified phosphorylated Tau preparation of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Tau (PHF-6) is recommended for detection of Thr 231 phosphorylated Tau of 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

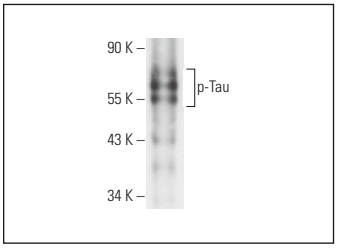
Molecular Weight of p-Tau: 46-80 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410.

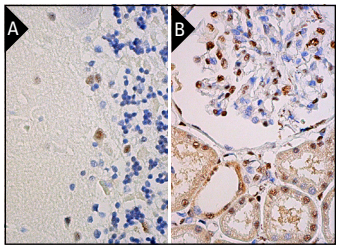
STORAGE

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

DATA



p-Tau (PHF-6): sc-32276. Western blot analysis of Tau phosphorylation in paired helical filaments from human brain.



p-Tau (PHF-6): sc-32276. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of cells in molecular layer (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and nuclear and cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Hossini, A.M., et al. 2015. Induced pluripotent stem cell-derived neuronal cells from a sporadic Alzheimer's disease donor as a model for investigating AD-associated gene regulatory networks. BMC Genomics 16: 84.
2. Md, S., et al. 2018. *In vitro* neuroprotective effects of naringenin nanoemulsion against β-Amyloid toxicity through the regulation of amyloidogenesis and Tau phosphorylation. Int. J. Biol. Macromol. 118: 1211-1219.
3. Babür, E., et al. 2019. Deficiency but not supplementation of selenium impairs the hippocampal long-term potentiation and hippocampus-dependent learning. Biol. Trace Elem. Res. 192: 252-262.
4. Tan, B., et al. 2021. N-methyl-D-aspartate receptor blockade reduces plasticity-related Tau expression and phosphorylation of Tau at Ser416 residue but not Thr231 residue. Exp. Brain Res. 239: 1627-1637.
5. Süer, C., et al. 2021. Long-term depression-related tau phosphorylation is enhanced by methylene blue in healthy rat hippocampus. Pharmacol. Rep. 73: 828-840.
6. Saray, H., et al. 2021. Rho-associated kinases contribute to the regulation of tau phosphorylation and amyloid metabolism during neuronal plasticity. Pharmacol. Rep. 73: 1303-1314.
7. Forte, N., et al. 2022. Positive association between plasmatic levels of orexin A and the endocannabinoid-derived 2-arachidonoyl lysophosphatidic acid in Alzheimer's disease. Front. Aging Neurosci. 14: 1004002.
8. Tan, B., et al. 2022. Changes in the histopathology and in the proteins related to the MAPK pathway in the brains of rats exposed to pre and postnatal radiofrequency radiation over four generations. J. Chem. Neuroanat. 126: 102187.

RESEARCH USE

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