SANTA CRUZ BIOTECHNOLOGY, INC.

p-Tau (6A192): sc-71794

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 4 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.
4. Iqbal, K., et al. 1998. Mechanisms of neurofibrillary degeneration and the formation of neurofibrillary tangles. J. Neural. Transm. Suppl. 53: 169-180.
5. 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.
6. Haque, N., et al. 1999. Regulation of expression, phosphorylation and biological activity of Tau during differentiation in SY5Y cells. Brain Res. 838: 69-77.
7. Hashiguchi, M., et al. 2000. 14-3-3ζ is an effector of Tau protein phosphorylation. J. Biol. Chem. 275: 25247-25254.

CHROMOSOMAL LOCATION

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

SOURCE

p-Tau (6A192) is a mouse monoclonal antibody raised against highly purified PHF-Tau preparation.

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.

RESEARCH USE

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

APPLICATIONS

p-Tau (6A192) is recommended for detection of Tau phosphorylated at Thr 231 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.

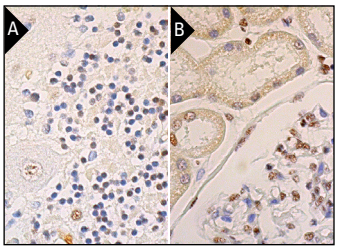
Molecular Weight of p-Tau: 46-68 kDa.

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

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



p-Tau (6A192): sc-71794. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing nuclear staining of Purkinje cells, cells in granular layer and cells in molecular layer (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Xiao, N., et al. 2018. CDK5-mediated Tau accumulation triggers methamphetamine-induced neuronal apoptosis via endoplasmic reticulum-associated degradation pathway. Toxicol. Lett. 292: 97-107.

STORAGE

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