SANTA CRUZ BIOTECHNOLOGY, INC.

p-Tau (Ser 262): sc-101813

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Tau can be phosphorylated by several protein kinases. Phosphorylation by Tau protein kinase II at Serine 404 is primarily responsible for the functional loss of Tau-mediated Tubulin polymerization. In addition, phosphorylation of microtubule-associated Tau results in the dissociation of Tau from the microtubules and Tubulin depolymerization. Serine 412 of Tau is modified by Tau protein kinase I/glycogen synthase kinase-3 β (TPKI/GSK-3β) to disrupt neuronal metabolism in anatomical areas vulnerable to Alzheimer's disease. TPKI/GSK-3β is expressed primarily in neurons and especially in neurites early in development, whereafter the distribution is concentrated mostly in the cell soma and the proximal neurite region.

REFERENCES

1. Tashiro, K., et al. 1997. Somatodendritic localization of phosphorylated Tau in neonatal and adult rat cerebral cortex. Neuroreport 8: 2797-2801.
2. Iqbal, K., et al. 1998. Mechanisms of neurofibrillary degeneration and the formation of neurofibrillary tangles. J. Neural Transm. Suppl. 53: 169-180.
3. 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.
4. Hashiguchi, M., et al. 2000. 14-3-3 ζ is an effector of Tau protein phosphorylation. J. Biol. Chem. 275: 25247-25254.
5. Lesort, M., et al. 2000. Insulin-like growth factor-1 and insulin mediate transient site-selective increases in Tau phosphorylation in primary cortical neurons. Neuroscience 99: 305-316.
6. Iqbal, K., et al. 2000. Mechanism of neurofibrillary degeneration and pharmacologic therapeutic approach. J. Neural Transm. Suppl. 59: 213-222.
7. Taniguchi, T., et al. 2001. Phosphorylation of Tau is regulated by PKN. J. Biol. Chem. 276: 10025-10031.
8. Alonso, A., et al. 2001. Hyperphosphorylation induces self-assembly of Tau into tangles of paired helical filaments/straight filaments. Proc. Natl. Acad. Sci. USA 98: 6923-6928.

CHROMOSOMAL LOCATION

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

SOURCE

p-Tau (Ser 262) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 262 of Tau isoform 2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

p-Tau (Ser 262) is recommended for detection of Ser 262 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 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 siRNA (m): sc-36615, Tau siRNA (r): sc-61900Tau shRNA Plasmid (h): sc-36614-SH, Tau shRNA Plasmid (m): sc-36615-SH, Tau shRNA Plasmid (r): sc-61900-SHTau shRNA (h) Lentiviral Particles: sc-36614-V, Tau shRNA (m) Lentiviral Particles: sc-36615-V and Tau shRNA (r) Lentiviral Particles: sc-61900-V.

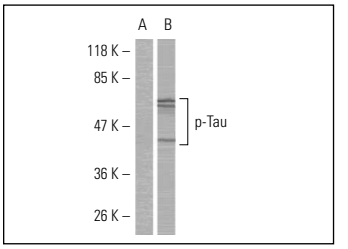
Molecular Weight of p-Tau: 46-68 kDa.

Positive Controls: rat hippocampal tissue or mouse brain tissue extract.

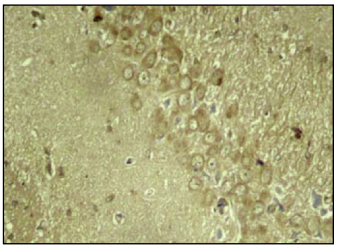
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Western blot analysis of phosphorylated Tau expression in mouse brain tissue extract. Blots were probed with p-Tau (Ser 262): sc-101813 preincubated with cognate phosphorylated peptide (**A**) and p-Tau (Ser 262): sc-101813 (**B**).



p-Tau (Ser 262): sc-101813. Immunoperoxidase staining of formalin-fixed, paraffin-embedded rat hippocampal tissue showing cytoskeletal staining.

SELECT PRODUCT CITATIONS

1. 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.

RESEARCH USE

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