SANTA CRUZ BIOTECHNOLOGY, INC.

p-Tau (Thr 522): sc-16931

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 beta (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. Steiner, B., Mandelkow, E.M., Biernat, J., Gustke, N., Meyer, H.E., Schmidt, B., Mieskes, G., Soling, H.D., Drechsel, D. and Kirschner, M.W. 1990. Phosphorylation of microtubule-associated protein Tau: identification of the site for Ca^{2+}-calmodulin dependent kinase and relationship with Tau phosphorylation in Alzheimer tangles. EMBO J. 9: 3539-3544.
2. Shiurba, R.A., Ishiguro, K., Takahashi, M., Sato, K., Spooner, E.T., Mercken, M., Yoshida, R., Wheelock, T.R., Yanagawa, H., Imahori, K. and Nixon, R.A. 1996. Immunocytochemistry of Tau phosphoserine 413 and Tau protein kinase I in Alzheimer pathology. Brain Res. 737: 119-132.
3. Michel, G., Mercken, M., Murayama, M., Noguchi, K., Ishiguro, K., Imahori, K. and Takashima, A. 1998. Characterization of Tau phosphorylation in glycogen synthase kinase-3β and cyclin dependent kinase-5 activator (p23) transfected cells. Biochim. Biophys. Acta 1380: 177-182.
4. Evans, D.B., Rank, K.B., Bhattacharya, K., Thomsen, D.R., Gurney, M.E. and Sharma, S.K. 2000. Tau phosphorylation at Serine 396 and Serine 404 by human recombinant Tau protein kinase II inhibits Tau's ability to promote microtubule assembly. J. Biol. Chem. 275: 24977-24983.

CHROMOSOMAL LOCATION

Genetic locus: MAPT (human) mapping to 17q21.1; Mapt (mouse) mapping to 11 E1.

STORAGE

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

SOURCE

p-Tau (Thr 522) is available as either goat (sc-16931) or rabbit (sc-16931-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Thr 522 of 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-16931 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Tau (Thr 522) is recommended for detection of Thr 522 phosphorylated Tau of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 and Tau siRNA (m): sc-36615.

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

Positive Controls: mouse brain extract: sc-2253 or human brain extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.