SANTA CRUZ BIOTECHNOLOGY, INC.

Tau (A-10): sc-390476

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, 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. Cross, D., et al. 1993. A Tau-like protein interacts with stress fibers and microtubules in human and rodent cultured cell lines. J. Cell Sci. 105: 51-60.
2. Lubke, U., et al. 1994. Microtubule-associated protein Tau epitopes are present in fiber lesions in diverse muscle disorders. Am. J. Pathol. 145: 175-188.

CHROMOSOMAL LOCATION

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

SOURCE

Tau (A-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 716-735 near the C-terminus of Tau 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.

Tau (A-10) is available conjugated to agarose (sc-390476 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390476 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390476 PE), fluorescein (sc-390476 FITC), Alexa Fluor® 488 (sc-390476 AF488), Alexa Fluor® 546 (sc-390476 AF546), Alexa Fluor® 594 (sc-390476 AF594) or Alexa Fluor® 647 (sc-390476 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390476 AF680) or Alexa Fluor® 790 (sc-390476 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390476 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Tau (A-10) is recommended for detection of multiple Tau isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

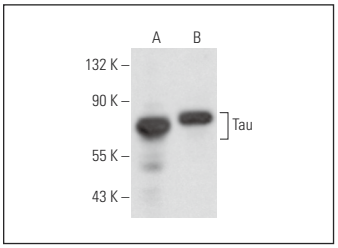
Tau (A-10) is also recommended for detection of multiple Tau isoforms in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Tau siRNA (h): sc-36614, Tau siRNA (m): sc-36615, Tau siRNA (r): sc-61900, Tau shRNA Plasmid (h): sc-36614-SH, Tau shRNA Plasmid (m): sc-36615-SH, Tau shRNA Plasmid (r): sc-61900-SH, Tau shRNA (h) Lentiviral Particles: sc-36614-V, Tau shRNA (m) Lentiviral Particles: sc-36615-V and Tau shRNA (r) Lentiviral Particles: sc-61900-V.

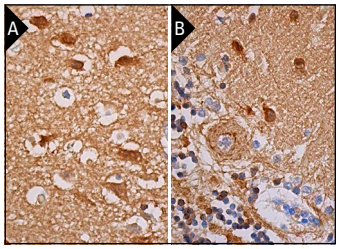
Molecular Weight of Tau: 46-80 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237 or TE671 cell lysate: sc-2416.

DATA



Tau (A-10): sc-390476. Western blot analysis of Tau expression in TE671 (**A**) and SK-N-MC (**B**) whole cell lysates.



Tau (A-10): sc-390476. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lateral ventricle tissue showing cytoplasmic and nuclear staining of neuronal cells and cytoplasmic staining of glial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells and nuclear staining of cells in granular layer and cells in molecular layer (**B**).

SELECT PRODUCT CITATIONS

1. Loeffler, D.A., et al. 2015. Effects of antibodies to phosphorylated and non-phosphorylated Tau on *in vitro* Tau phosphorylation at Serine-199: preliminary report. Exp. Gerontol. 67: 15-18.
2. Guo, Y., et al. 2022. Histone H2A ubiquitination resulting from Brap loss of function connects multiple aging hallmarks and accelerates neurodegeneration. iScience 25: 104519.
3. Chaudhary, S., et al. 2023. Fetal alcohol exposure impairs learning and memory functions and elevates levels of various biochemical markers of Alzheimer's disease in the brain of twelve-month-old rats. Alcohol Clin. Exp. Res. 47: 882-892.

RESEARCH USE

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