SANTA CRUZ BIOTECHNOLOGY, INC.

Tau (D-8): sc-166060

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.
3. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Tau (D-8) is a mouse monoclonal antibody raised against amino acids 1-150 of Tau of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Tau (D-8) is available conjugated to agarose (sc-166060 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166060 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166060 PE), fluorescein (sc-166060 FITC), Alexa Fluor® 488 (sc-166060 AF488), Alexa Fluor® 546 (sc-166060 AF546), Alexa Fluor® 594 (sc-166060 AF594) or Alexa Fluor® 647 (sc-166060 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166060 AF680) or Alexa Fluor® 790 (sc-166060 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

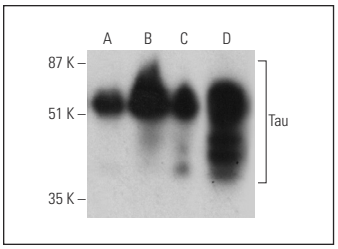
Tau (D-8) is recommended for detection of Tau of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

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.

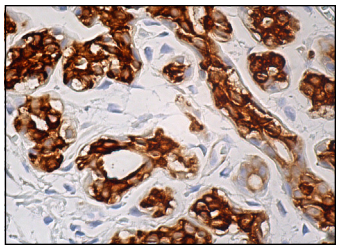
Molecular Weight of Tau: 46-80 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, SK-N-SH cell lysate: sc-2410 or human brain extract: sc-364375.

DATA



Tau (D-8) HRP: sc-166060 HRP. Direct western blot analysis of Tau expression in IMR-32 (**A**), SK-N-SH (**B**) and SH-SY5Y (**C**) whole cell lysates and human brain tissue extract (**D**).



Tau (D-8): sc-166060. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic and membrane staining of glandular cells.

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. Stern, R.A., et al. 2016. Preliminary study of plasma exosomal Tau as a potential biomarker for chronic traumatic encephalopathy. J. Alzheimers Dis. 51: 1099-1109.
3. Banerjee, S., et al. 2020. Tau protein- induced sequestration of the eukaryotic ribosome: implications in neurodegenerative disease. Sci. Rep. 10: 5225.
4. Jang, M., et al. 2022. Hyperglycemic neurovasculature-on-a-chip to study the effect of SIRT1-targeted therapy for the type 3 diabetes "Alzheimer's disease". Adv. Sci. 9: e2201882.

STORAGE

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