SANTA CRUZ BIOTECHNOLOGY, INC.

Tau (TAU-5): sc-58860

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).

CHROMOSOMAL LOCATION

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

SOURCE

Tau (TAU-5) is a mouse monoclonal antibody raised against purified Tau of bovine 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.

APPLICATIONS

Tau (TAU-5) is recommended for detection of both phosphorylated and non-phosphorylated Tau proteins of mouse, rat, human and bovine origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200); non cross-reactive with Tubulin or other microtubule associated proteins.

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

Molecular Weight of Tau: 46-80 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, mouse brain extract: sc-2253 or TE671 cell lysate: sc-2416.

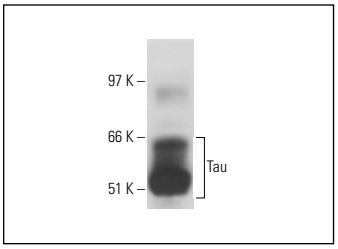
STORAGE

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

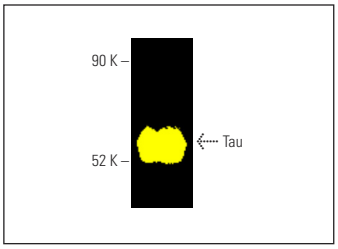
RESEARCH USE

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

DATA



Tau (TAU-5): sc-58860. Western blot analysis of Tau expression in mouse brain tissue extract.



Tau (TAU-5): sc-58860. Fluorescent western blot analysis of Tau expression in mouse brain tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_1 BP-CFL 488: sc-533661.

SELECT PRODUCT CITATIONS

1. Ittner, L.M., et al. 2009. Phosphorylated Tau interacts with c-Jun N-terminal kinase-interacting protein 1 (JIP1) in Alzheimer disease. J. Biol. Chem. 284: 20909-20916.
2. Liu, X.L., et al. 2015. Sequence-dependent abnormal aggregation of human Tau fragment in an inducible cell model. Biochim. Biophys. Acta 1852: 1561-1573.
3. Wang, H.Y., et al. 2017. PTI-125 binds and reverses an altered conformation of filamin A to reduce Alzheimer's disease pathogenesis. Neurobiol. Aging 55: 99-114.
4. Federico, C., et al. 2018. Phosphorylated nucleolar Tau protein is related to the neuronal *in vitro* differentiation. Gene 664: 1-11.
5. Xiang, X.J., et al. 2019. Mitochondrial methionine sulfoxide reductase B2 links oxidative stress to Alzheimer's disease-like pathology. Exp. Neurol. 318: 145-156.
6. George, S., et al. 2020. Photobiomodulation-induced differentiation of immortalized adipose stem cells to neuronal cells. Lasers Surg. Med. 52: 1032-1040.
7. Zhong, B.R., et al. 2021. TUFM is involved in Alzheimer's disease-like pathologies that are associated with ROS. FASEB J. 35: e21445.
8. Chomiak, A.A., et al. 2022. Nde1 is required for heterochromatin compaction and stability in neocortical neurons. iScience 25: 104354.
9. Xu, Q.Q., et al. 2023. Patchouli alcohol attenuates the cognitive deficits in a transgenic mouse model of Alzheimer's disease via modulating neuropathology and gut microbiota through suppressing C/EBPβ/AEP pathway. J. Neuroinflammation 20: 19.

CONJUGATES

See **Tau (Tau 46): sc-32274** for Tau antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.