

# Tau (E-4): sc-515539

## 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 Alzheimer's 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 (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 358-379 at the C-terminus of Tau (CNS isoform) of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Tau (E-4) is available conjugated to agarose (sc-515539 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515539 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515539 PE), fluorescein (sc-515539 FITC), Alexa Fluor® 488 (sc-515539 AF488), Alexa Fluor® 546 (sc-515539 AF546), Alexa Fluor® 594 (sc-515539 AF594) or Alexa Fluor® 647 (sc-515539 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515539 AF680) or Alexa Fluor® 790 (sc-515539 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515539 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## RESEARCH USE

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

## APPLICATIONS

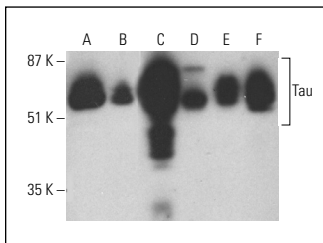
Tau (E-4) is recommended for detection of multiple Tau isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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).

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.

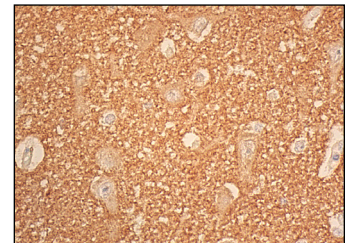
Molecular Weight of Tau: 46-80 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or SH-SY5Y cell lysate: sc-3812.

## DATA



Tau (E-4) HRP: sc-515539 HRP. Direct western blot analysis of Tau expression in SK-N-SH (A) and SH-SY5Y (B) whole cell lysates and rat brain (C), mouse brain (D), human brain (E) and human hypothalamus (F) tissue extracts.



Tau Antibody (E-4): sc-515539. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells, glial cells, endothelial cells and neuropil. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detected with m-IgG Fc BP-B: sc-533652 and ImmunoCruz® ABC Kit: sc-516216.

## SELECT PRODUCT CITATIONS

1. Liu, J., et al. 2017. Roscovitine, a CDK5 inhibitor, alleviates sevoflurane-induced cognitive dysfunction via regulation Tau/GSK3β and ERK/PPARγ/CREB signaling. *Cell. Physiol. Biochem.* 44: 423-435.
2. Charafeddine, R.A., et al. 2019. Tau repeat regions contain conserved histidine residues that modulate microtubule-binding in response to changes in pH. *J. Biol. Chem.* 294: 8779-8790.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.