SANTA CRUZ BIOTECHNOLOGY, INC.

p-Tau (PHF-13): sc-32275

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, in 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

p-Tau (PHF-13) is a mouse monoclonal antibody raised against highly purified phosphorylated Tau preparation 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.

p-Tau (PHF-13) is available conjugated to agarose (sc-32275 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-32275 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32275 PE), fluorescein (sc-32275 FITC), Alexa Fluor® 488 (sc-32275 AF488), Alexa Fluor® 546 (sc-32275 AF546), Alexa Fluor® 594 (sc-32275 AF594) or Alexa Fluor® 647 (sc-32275 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32275 AF680) or Alexa Fluor® 790 (sc-32275 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

p-Tau (PHF-13) is recommended for detection of Tau phosphorylated at Ser 396 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

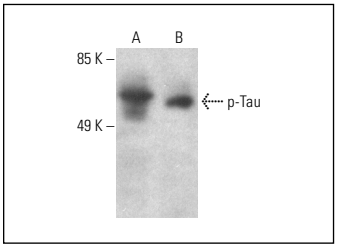
Molecular Weight of p-Tau: 46-80 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185 or SH-SY5Y cell lysate: sc-3812.

STORAGE

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

DATA



p-Tau (PHF-13): sc-32275. Western blot analysis of Tau phosphorylation in Neuro-2A (**A**) and SH-SY5Y (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ilievski, V., et al. 2018. Chronic oral application of a periodontal pathogen results in brain inflammation, neurodegeneration and Amyloid β production in wild type mice. PLoS ONE 13: e0204941.
2. Pierzynowska, K., et al. 2019. Autophagy-dependent mechanism of genistein-mediated elimination of behavioral and biochemical defects in the rat model of sporadic Alzheimer's disease. Neuropharmacology 148: 332-346.
3. Saadi, M., et al. 2020. Involvement of NLRC4 inflammasome through caspase-1 and IL-1β augments neuroinflammation and contributes to memory impairment in an experimental model of Alzheimer's like disease. Brain Res. Bull. 154: 81-90.
4. Alavi, M.V. 2021. Tau phosphorylation and OPA1 proteolysis are unrelated events: implications for Alzheimer's disease. Biochim. Biophys. Acta Mol. Cell Res. 1868: 119116.
5. Ahmad, F., et al. 2021. Behavioural functions and cerebral blood flow in a P301S tauopathy mouse model: a time-course study. Int. J. Mol. Sci. 22: 9727.
6. Qi, C.C., et al. 2021. Impaired learning and memory ability induced by a bilaterally hippocampal injection of streptozotocin in mice: involved with the adaptive changes of synaptic plasticity. Front. Aging Neurosci. 13: 633495.
7. Cordaro, M., et al. 2021. Key mechanisms and potential implications of *Hericium erinaceus* in NLRP3 inflammasome activation by reactive oxygen species during Alzheimer's disease. Antioxidants 10: 1664.
8. Liu, S., et al. 2022. Exosomes derived from bone-marrow mesenchymal stem cells alleviate cognitive decline in AD-like mice by improving BDNF-related neuropathology. J. Neuroinflammation 19: 35.

RESEARCH USE

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