Purified anti-Tau Phospho (Thr231) Antibody (Previously Covance catalog# MMS-545P)

Catalog# / Size
828903 / 25 µL
828901 / 100 µL

Clone
PHF-6

Regulatory Status
RUO

Other Names
Microtubule-associated protein tau, PHF-tau, paired helical filament-tau, neurofibrillary tangle protein, microtubule-associated protein tau, isoform 4, G protein beta1/gamma2 subunit-interacting factor 1

Previously
Covance Catalog# MMS-545P

Isotype
Mouse IgG1, κ

Description
Paired helical filaments (PHFs) are the major building blocks of neurofibrillary lesions in Alzheimer's disease brains and are composed of hyperphosphorylated tau protein. Predominantly expressed in axons, alternatively spliced forms of tau comprise a family of microtubule-associated proteins that normally promote and stabilize the assembly of microtubules. PHF-tau differs from normal tau by its abnormal hyperphosphorylation, which results in decreased binding of tau to microtubules. The decreased affinity of PHF-tau for microtubules, coupled with reduced levels of normal tau, destabilizes microtubules leading to an impairment of axonal transport, neuronal death and the aggregation of PHFs. Therefore, hyperphosphorylation of tau is believed to be a key event in the pathogenesis of Alzheimer's disease.

Product Details

Verified Reactivity
Human

Antibody Type
Monoclonal

Host Species
Mouse

Immunogen
The PHF-6 antibody was raised using PHF-tau preparations from human brain.

Formulation
Phosphate-buffered solution; no preservatives or carrier proteins.

Preparation
The antibody was purified by affinity chromatography.

Concentration
1.0 mg/mL

Storage & Handling
The antibody solution should be stored undiluted between 2°C and 8°C. Please note the storage condition for this antibody has been changed from -20°C to between 2°C and 8°C. You can also check your vial or your CoA to find the most accurate storage condition for this antibody.

Application
WB - Quality tested
IHC-P - Verified

Recommended Usage
Each lot of this antibody is quality control tested by western blotting. For western blotting, the suggested use of this reagent is 0.5 - 1.0 µg/mL. For immunohistochemistry on formalin-fixed paraffin-embedded tissue sections, a concentration range of 2.5 - 5.0 µg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.

Application Notes
This antibody is effective in immunoblotting (WB).

The PHF-6 antibody reacts with human tau phosphorylated at Thr 231.

Direct ELISA was done using phospho and non-phospho specific peptides, mainly to confirm specificity. Application has not been verified on tissue/cell lysates.

Application References
Purified anti-Tau Phospho (Thr231)

BioLegend citation)

Product Citations

RRID
AB_2715849 (BioLegend Cat. No. 828903)
AB_2564924 (BioLegend Cat. No. 828901)

Antigen Details

Biology Area Cell Biology, Neurodegeneration, Neuroscience, Protein Misfolding and Aggregation
Molecular Family Phospho-Proteins, Tau
Gene ID 4137

Related Protocols

- Western Blotting Protocol
- Immunohistochemistry Protocol for Paraffin-Embedded Sections

Other Formats

Purified anti-Tau Phospho (Thr231)

Product Data

Rat brain whole tissue lysates (15 µg total protein) from 31 days (negative control) and 5 days post-partum animals (positive control) were resolved on a 4-12% Bis-Tris gel, transferred to a PVDF membrane, and probed with 1.0 µg/mL of purified anti-Tau phospho (Thr231) (clone PHF-6) for 2 hours at room temperature. Proteins were visualized by chemiluminescence detection using HRP Goat anti-mouse IgG (Cat. No. 405306) at a 1:3000 dilution. Direct-Blot™ HRP anti-GAPDH (Cat. No. 649204) was used as a loading control at a 1:50000 dilution. Western-Ready™ ECL Substrate Premium Kit (Cat. No. 426319) was used as a detection agent. Lane M: Molecular weight marker.
IHC staining of purified anti-Tau Phospho (Thr231) (clone PHF-6) on formalin-fixed paraffin-embedded human Alzheimer’s brain tissue. Following antigen retrieval using 88% formic acid, the tissue was blocked and incubated without (Panels A and C) and with (Panels B and D) Lambda Phosphatase Protein overnight at 4°C. The tissue was then incubated without (panels A and B) or with (panel C and D) 5 µg/mL of purified anti-Tau Phospho (Thr231) (clone PHF-6) overnight at 4°C. BioLegend’s Ultra Streptavidin HRP Kit (Multi-Species, DAB) (Cat. No. 929501) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. Images were captured with a 40X objective. Scale bar: 50 µm.

Biotinylated Tau phospho (Thr231) (red line) or non-phospho (blue line) peptides were incubated at 2 µg/mL onto 96-well plates coated with NeutrAvidin in 0.1% BSA-PBST overnight at 4°C. Direct ELISA was performed by further incubating the plate with serial dilutions of purified anti-Tau phospho (Thr231) (clone PHF-6) in 0.1% BSA-PBST for 1 hour at room temperature. Bound antibody was detected with HRP Goat anti-mouse IgG (Cat. No. 405306). TMB substrate set (Cat. No. 421101) was used as a detection system. Absorbance was measured at 450 nm.