

Anti-Tau, 15-25 Antibody (Previously Covance catalog# MMS-520R)

Catalog# / Size	835201 / 500 µL
Clone	TAU-13
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-520R
Isotype	Mouse IgG1, κ
Description	<p>Tau proteins are microtubule-associated protein (MAPs) which are abundant in neurons of the central nervous system, but are also expressed at very low levels in CNS astrocytes and oligodendrocytes and elsewhere. One of tau's main functions is to modulate the stability of axonal microtubules. Tau is active primarily in the distal portions of axons providing microtubule stabilization as well as flexibility. Pathologies and dementias of the nervous system such as Alzheimer's disease feature tau proteins that have become defective and no longer stabilize microtubules properly. As a result, tau forms aggregates with specific structural properties referred to as Paired Helical Filaments (PHFs) that are a characteristic of many different types of dementias, known as tauopathies. Tau has two primary ways of controlling microtubule stability: isoforms and phosphorylation. Six tau isoforms exist in human brain tissue, and they are distinguished by the number of binding domains. Three isoforms have three binding domains and the remaining three have four binding domains. The binding domains are located in the carboxy-terminus of the protein and are positively-charged (for binding to the negatively-charged microtubule). Tau isoforms with four binding domains are better at stabilizing microtubules than those with three binding domains. Thus, in the human brain, the tau proteins constitute a family of six isoforms with the range from 352-441 amino acids. They also differ in either zero, one or two inserts of 29 amino acids at the N-terminal part (exon 2 and 3), and three or four repeat-binding regions at the C-terminus. So, the longest isoform in the CNS has four repeats (R1, R2, R3 and R4) and two inserts (441 amino acids total), while the shortest isoform has three repeats (R1, R3 and R4) and no insert (352 amino acids total). Tau is also a phosphoprotein with 79 potential Serine (Ser) and Threonine (Thr) phosphorylation sites on the longest tau isoform. Phosphorylation has been reported on approximately 30 of these sites in normal tau proteins. Mechanisms that drive tau lesion formation in the highly prevalent sporadic form of AD are not fully understood, but appear to involve abnormal post-translational modifications (PTMs) that influence tau function, stability, and aggregation propensity.</p>

Product Details

Verified Reactivity	Human
Antibody Type	Monoclonal
Host Species	Mouse
Preparation	Ascites
Concentration	The concentration is not quantified as this product is sold as undiluted crude mouse ascites fluid. The concentration might vary from lot-to-lot and an estimated concentration would be 1-3 mg/ml.
Storage & Handling	Store at -20°C or below. Upon initial thawing, apportion into working aliquots and store at -20°C or below. Avoid repeated freeze-thaw cycles to prevent denaturing the antibody. Do not store in frost-free freezers.
Application	WB - Quality tested IHC-Other - Reported in the literature, not verified in house
Recommended Usage	Each lot of this antibody is quality control tested by western blotting. For western blotting, a dilution range of 1:500-1:1000 is suggested. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	TAU-13 is a mouse monoclonal antibody that binds to human tau and is able to stain brain tissue early in Alzheimer's disease. TAU-13 is specific for human tau; it does not react with bovine, murine

or rat tau. Preliminary assignment of its epitope indicates that it maps to amino acid residues 15-25 on the longest isoform of human tau.

This antibody clone has been reported for use on IHC of 4% PFA-fixed free floating sections¹.

Application References

1. Bi M, *et al.* 2011. *PLoS ONE*. 6:12. (IHC-other)
2. García-Sierra F, *et al.* 2003. *J Alzheimers Dis*. 5:65–77. (IHC-other)

Product Citations

1. Crotti A, *et al.* 2019. *Sci Rep*. 9:9477. [PubMed](#)
2. Liu P, *et al.* 2019. *Acta Neuropathol Commun*. 7:111. [PubMed](#)
3. Pickett EK, *et al.* 2019. *Cell Rep*. 29:3592. [PubMed](#)
4. Liu P, *et al.* 2020. *Sci Rep*. 10:3869. [PubMed](#)
5. Busche MA, *et al.* 2019. *Nat Neurosci*. 22:57. [PubMed](#)
6. Nogueras-Ortiz C, *et al.* 2014. *Front Neurosci*. 7:277. [PubMed](#)
7. Fu H, *et al.* 2016. *PLoS One*. 11: 0159463. [PubMed](#)
8. Zhao X, *et al.* 2016. *Nat Med*. 22:1268-1276. [PubMed](#)
9. Rauch JN, *et al.* 2020. *Nature*. 580:381. [PubMed](#)

RRID

AB_2565341 (BioLegend Cat. No. 835201)

Antigen Details

Structure

Unmodified Tau isoforms have an apparent molecular weight ranging from 33-79 kD. Additional high and low molecular weight Tau species have been observed in brain tissues.

Distribution

Tissue distribution: Central nervous system, peripheral ganglia and nerves, kidney, skeletal, and heart muscle.
Cellular distribution: Cytoskeleton, nucleus, plasma membrane, and cytosol.

Function

Tau promotes microtubule assembly and stability. The short tau isoforms allow plasticity of the cytoskeleton whereas the longer isoforms may preferentially play a role in its stabilization.

Interaction

Tau interacts with Sequestosome-1, Peptidyl-prolyl cis-trans isomerase FKBP4, casein kinase I isoform delta, serine/threonine-protein kinase Sgk1, Laforin, and alpha-synuclein.

Biology Area

Cell Biology, Neurodegeneration, Neuroscience, Protein Misfolding and Aggregation

Molecular Family

Tau

Antigen References

1. Castillo-Carranza DL, *et al.* 2014. *J Neurosci*. 12:4260. (WB)

Gene ID

[4137](#)

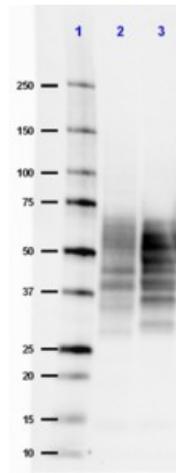
Related Protocols

[Western Blotting Protocol](#)

Other Formats

Anti-Tau, 15-25, Purified anti-Tau, 15-25

Product Data



Western blot of anti-Tau, 15-25 antibody (clone TAU-13). Lane 1: Molecular weight marker; Lane 2: 20 µg of human Alzheimer's disease brain lysate; Lane 3: 20 µg of normal human brain lysate. The blot was incubated with a 1:500 dilution of the primary antibody overnight at 4°C, followed by incubation with HRP labeled goat anti-mouse IgG (Cat. No. 405306). Enhanced chemiluminescence was used as the detection system.

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587