

Purified anti-Tau, 316-355 Antibody (Previously Covance catalog# SIG-39405)

Catalog# / Size	816703 / 25 µL 816701 / 100 µL 816702 / 500 µL
Clone	77G7
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# SIG-39405
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.</p> <p>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.</p> <p>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
Formulation	Phosphate-buffered solution.
Preparation	The antibody was purified by affinity chromatography.
Concentration	2 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 - 10 µg/mL. For immunohistochemistry on formalin-fixed paraffin-embedded tissue sections, a concentration range of 1.0 - 10 µg/mL is suggested. It is recommended that the reagent be titrated for optimal performance for each application.

Application Notes This antibody is specific for all six isoforms of tau protein.

Product Citations

1. Li T, *et al.* 2016. Nat Commun. 7:12082. [PubMed](#)
2. Karikari TK, *et al.* 2020. ACS Chem Neurosci. 2.622916667. [PubMed](#)
3. Gu J, *et al.* 2020. J Biol Chem. 295:13812. [PubMed](#)
4. Carlomagno Y, *et al.* 2021. Cell Reports. 34(11):108843. [PubMed](#)

RRID

AB_2728535 (BioLegend Cat. No. 816703)
AB_2564801 (BioLegend Cat. No. 816701)
AB_2564802 (BioLegend Cat. No. 816702)

Antigen Details

Structure Expected Molecular Weight: 6 isoforms of TAU at 45.9 kD; 42.6 kD; 42.9 kD; 40 kD; 39.7 kD; 36.8 kD

Biology Area Cell Biology, Neurodegeneration, Neuroscience, Protein Misfolding and Aggregation

Molecular Family Tau

Gene ID [4137](#)

Related Protocols

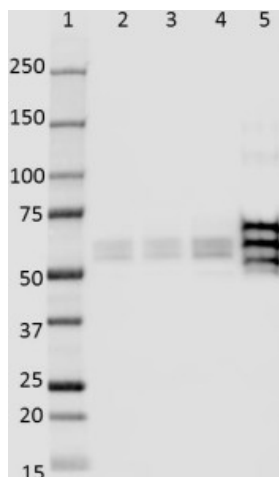
[Western Blotting Protocol](#)

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

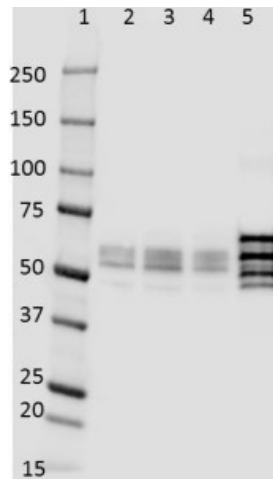
Other Formats

Purified anti-Tau, 316-355

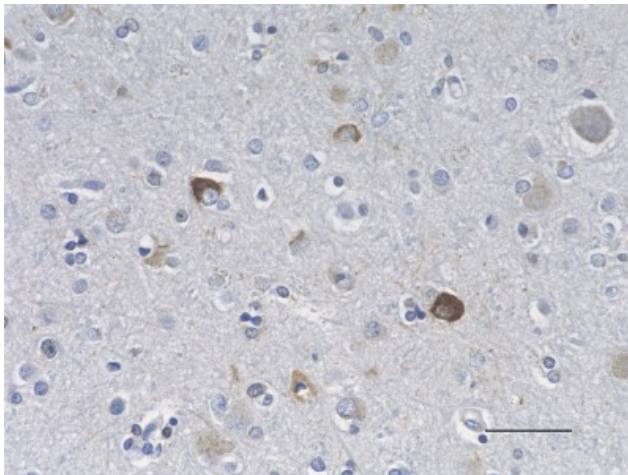
Product Data



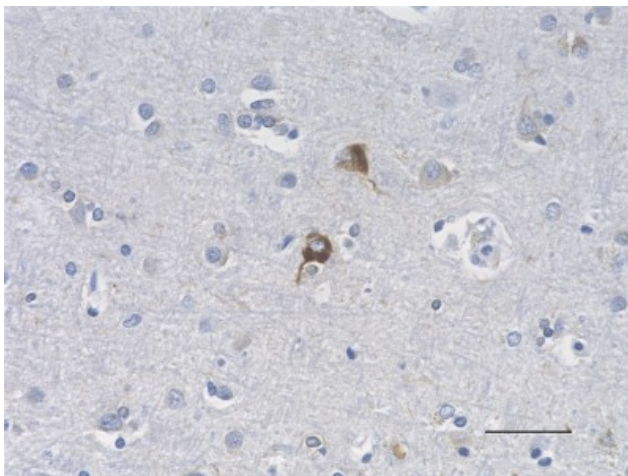
Western blot of purified anti-Tau, 316-355 antibody (clone 77G7). Lane 1: Molecular weight marker; Lane 2: 10 µg of human brain lysate; Lane 3: 15 µg of human brain lysate; Lane 4: 20 µg of human brain lysate; Lane 5: 2 µL of recombinant human Tau protein ladder. The blot was incubated with 0.5 µg/mL 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.



Western blot of purified anti-Tau, 316-355 antibody (clone 77G7). Lane 1: Molecular weight marker; Lane 2: 10 µg of human brain lysate; Lane 3: 15 µg of human brain lysate; Lane 4: 20 µg of human brain lysate; Lane 5: 2 µL of recombinant human Tau protein ladder. The blot was incubated with 10 µg/mL 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.



IHC staining of purified anti-Tau, 316-355 antibody (clone 77G7) on formalin-fixed paraffin-embedded human Alzheimer's disease brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R., the tissue was incubated with 1 µg/mL of the primary antibody overnight at 4°C. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale bar: 50 µm



IHC staining of purified anti-Tau, 316-355 antibody (clone 77G7) on formalin-fixed paraffin-embedded human Alzheimer's disease brain tissue. Following antigen retrieval using Sodium Citrate H.I.E.R., the tissue was incubated with 1 µg/mL of the primary antibody overnight at 4°C. BioLegend's Ultra-Streptavidin (USA) HRP kit (Multi-Species, DAB, Cat. No. 929901) was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The image was captured with a 40X objective. Scale bar: 50 µm

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.

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