Tau Antibody Sampler Kit

Catalog# / Size 899902 / 1 kit

Regulatory Status RUO

Other Names Please refer to individual product datasheets.

Description Tau protein promotes microtubule assembly and stability. Tau is abundant in neurons of the central nervous system, and is expressed at low levels in astrocytes and oligodendrocytes. Six isoforms of tau are generated by alternative splicing of the MAPT gene. These isoforms are distinguished by the number of tubulin binding domains, 3 (3R) or 4 (4R), in the C-terminal of the protein and by one (1N), two (2N), or no (0N) inserts in the N-terminal domain. Tau isoforms are differentially expressed during development. Abnormal hyperphosphorylation, aggregation, and toxic gain of function of tau are associated with several neurological disorders, including Alzheimer's disease (AD). The major building block of neurofibrillary lesions in AD brains consists of paired helical filaments (PHFs) of abnormally hyperphosphorylated tau. Phosphorylated tau at serine 262 is commonly associated with AD legion sites. Recent studies indicate that cerebrospinal fluid tau phosphorylated at threonine 181 has diagnostic utility for several neurological disorders including AD. The Tau Antibody Sampler Kit provides flexibility for sampling and detection of phosho-specific species of tau and total tau in human tissue.

Kit Contents

Kit Contents

Specificity	Format	Clone	Size	Reactivity	Isotype
Anti-Tau Phospho (Ser262)	Purified	A15091A	25 µg	Human	Mouse IgG2b, κ
Anti-Tau Phospho (Thr181)	Purified	M7004D06	25 µg	Human	Mouse IgG1, κ
Anti-Tau, 1-223	Purified	A16103A	25 µg	Human	Rat IgG2b, κ
Anti-Tau, 368-441	Purified	A16097F	25 µg	Human	Rat IgG2a, κ

*** For detailed information about each specificity, please refer to the datasheets of the individual products.**

Product Details

Verified Reactivity Human

Formulation Please refer to individual product datasheets of the purified formats for details.

Preparation All antibodies in this kit were purified by affinity chromatography.

Storage & Handling Upon receipt, store undiluted at 2-8°C.

Application IHC-P, WB - *Quality tested*

Recommended Usage Each lot of antibodies in this kit is quality control tested by immunohistochemical staining on formalin-fixed paraffin-embedded tissue or Western blotting. For immunohistochemistry, the suggested uses of these reagents are as follows:

Anti-Tau Phospho (Ser262): 5.0 - 10.0 µg/ml
Anti-Tau Phospho (Thr181): 1.0 - 10.0 µg/ml

For Western blotting, the suggested uses of these reagents are as follows:

Anti-Tau, 1-223: 1.0 - 5.0 µg/ml
Anti-Tau, 368-441: 1.0 - 5.0 µg/ml

It is recommended that the reagent be titrated for optimal performance for each application.

Application Notes For verified or reported applications for these antibodies, please see individual product datasheets.

RRID AB_2734652 (BioLegend Cat. No. 899902)

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, Alpha-synuclein.

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

Molecular Family Phospho-Proteins, Tau

Antigen References

1. Frontini M, *et al.* 2009. *Nucleic Acids Res.* 37:1073.
2. Yarilina A, *et al.* 2008. *Nat. Immunol.* 9:378.
3. Hayashi H, *et al.* 2011. *Proc. Natl. Acad. Sci. USA.* 108:18766.
4. Hida S, *et al.* 2005. *Blood.* 106:2011.
5. Lin R, *et al.* 1999. *Mol. Cell Biol.* 19:959.
6. Hiscott J, *et al.* 2007. *J. Biol. Chem.* 282:15325.
7. Lu R. 2008. *Trends Immunol* 29:487.
8. Barnes BJ, *et al.* 2003. *J. Biol. Chem.* 278:16630.
9. Rullo OJ, *et al.* 2010. *Ann. Rheum. Dis.* 69:611.
10. Botti E, *et al.* 2011. *Proc. Natl. Acad. Sci. USA* 108:13710.
11. Restivo G, *et al.* 2011. *EMBO* 30:4571.
12. Yu Y, *et al.* 2010. *Immunity.* 33:863.
13. Liang Q, *et al.* 2011. *J. Immunol.* 186:1001.
14. Ouyang X, *et al.* 2011. *Nat. Commun.* 2:314.
15. Thibault DL, *et al.* 2008. *J. Clin. Invest.* 118:1417.
16. Kraus TA, *et al.* 2003. *J. Biol. Chem.* 278:13033.
17. Xiao W, *et al.* 2001. *J. Biol. Chem.* 276:23275.

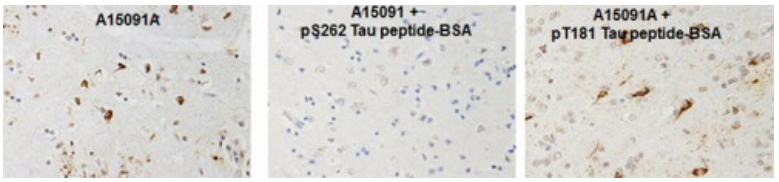
Gene ID 4137

Related Protocols

Western Blotting Protocol

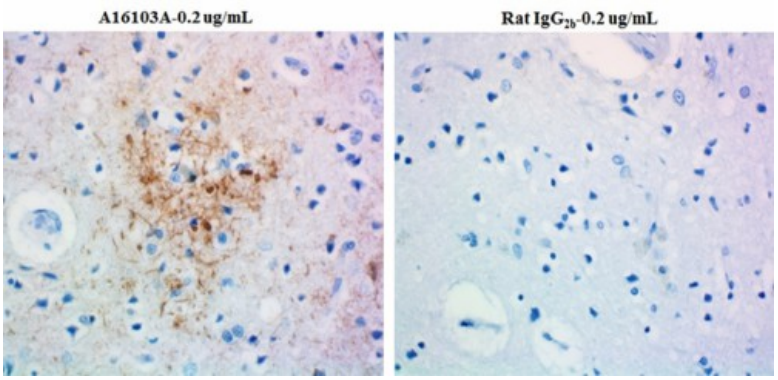
Immunohistochemistry Protocol for Paraffin-Embedded Sections

Product Data

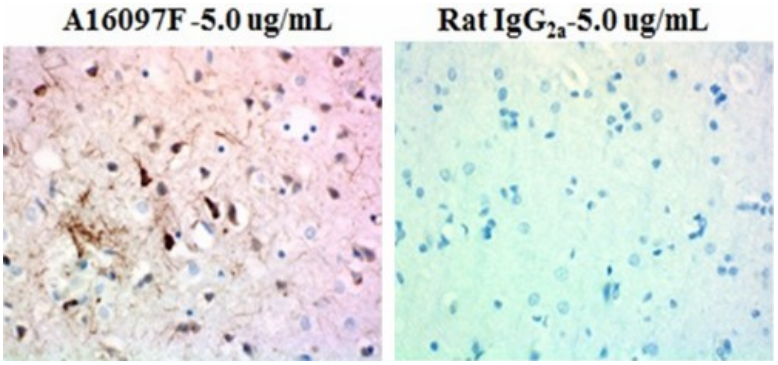


IHC staining of anti-Tau Phospho (Ser262) antibody (clone A15091A) on formalin-fixed paraffin-embedded Alzheimer's brain tissue. Following antigen retrieval using Sodium Citrate, the tissues were incubated with the primary antibody at 10 µg/ml for 2 hours at room temperature. BioLegend's Ultra Streptavidin (USA) HRP Detection Kit

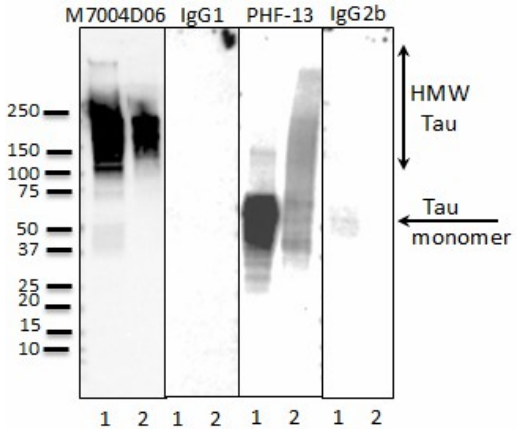
was used for detection followed by hematoxylin counterstaining, according to the protocol provided. The antibody specificity was confirmed by inhibiting its staining by pre-incubating the mAb with a 10-fold molar excess of pS262 tau peptide-BSA. In contrast, incubation with a 10-fold molar excess of a pT181 Tau peptide-BSA did not alter the antibody's activity.



IHC staining of anti-Tau, 1-223 antibody (clone A16103A) and rat IgG2b isotype control on formalin-fixed paraffin-embedded Alzheimer's disease brain tissue. Following antigen retrieval using Sodium Citrate, the tissues were incubated with anti-Tau or rat IgG2b at 0.2 µg/ml for 1 hour at room temperature. Biotinylated anti-rat IgG, HRP Streptavidin, and DAB (3,3'-diaminobenzidine) substrate were used as the detection system. Slides were counterstained with hematoxylin.



IHC staining of anti-Tau, 368-441 antibody (clone A161097F) and rat IgG2a isotype control on formalin-fixed paraffin-embedded Alzheimer's disease brain tissue. Following antigen retrieval using Sodium Citrate, the tissues were incubated with 5.0 µg/ml of anti-Tau or rat IgG2a overnight at 4°C. Biotinylated anti-rat IgG, HRP Streptavidin, and DAB (3,3'-diaminobenzidine) substrate were used as the detection system. Slides were counterstained with hematoxylin.



Western blot of anti-Tau Phospho (Thr181) (clone M7004D06), anti-Tau Phospho (Ser396) (clone PHF-13) antibodies, and isotype-matched control IgG1 and IgG2b. Lane 1: 20 µg of Parkinson's disease human brain lysate; Lane 2: 2 µg of Tau paired helical filaments. The blots were incubated overnight at 4°C with 10 µg/ml of the primary antibody, followed by incubation with horseradish peroxidase labeled goat anti-mouse secondary antibody. Western blot of anti-Tau Phospho (Ser396) (clone PHF-13) serves as a positive control for Tau staining.

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