

Tau Monoclonal Antibody (T14)

Catalog Number13-1400

Product data sheet

Details		Species Reactivity	
Size	100 µg	Species reactivity	Bovine, Human
Host/Isotope	Mouse / IgG1, kappa	Published species	Rat, Mouse, Human, Not Applicable
Class	Monoclonal	Tested Applications	
Type	Antibody	ELISA (ELISA)	Dilution *0.1-0.5 µg/mL
Clone	T14	Immunohistochemistry (IHC)	5-10 µg/mL
Immunogen	Bovine Tau.	Immunoprecipitation (IP)	2-5 µg
Conjugate	Unconjugated	Western Blot (WB)	1:250
Form	Liquid	Published Applications	
Purification	purified	Western Blot (WB)	See 7 publications below
Storage buffer	PBS	Immunohistochemistry (IHC)	See 4 publications below
Contains	0.1% sodium azide	* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.	
Storage Conditions	-20°C		

**Background/Target Information**

Tau is a neuronal microtubule-associated protein found predominantly on axons. The function of Tau is to promote tubulin polymerization and stabilize microtubules. The C-terminus binds axonal microtubules while the N- terminus binds neural plasma membrane components, suggesting that tau functions as a linker protein between both. Axonal polarity is predetermined by TAU/MAPT localization (in the neuronal cell) in the domain of the cell body defined by the centrosome. The short isoforms allow plasticity of the cytoskeleton while the longer isoforms may preferentially play a role in its stabilization. In its hyper-phosphorylated form, Tau is the major component of paired helical filaments (PHF), the building block of neurofibrillary lesions in Alzheimer's diseases (AD) brain. Hyper-phosphorylation impairs the microtubule binding function of Tau, resulting in the destabilization of microtubules in AD brains, ultimately leading to the degeneration of the affected neurons. Numerous serine/threonine kinases phosphorylate Tau, including GSK-3beta, protein kinase A (PKA), cyclin-dependent kinase 5 (cdk5) and casein kinase II. Hyper-phosphorylated Tau is found in neurofibrillary lesions in a range and other central nervous system disorders such as Pick's disease, frontotemporal dementia, cortico-basal degeneration and progressive supranuclear palsy.

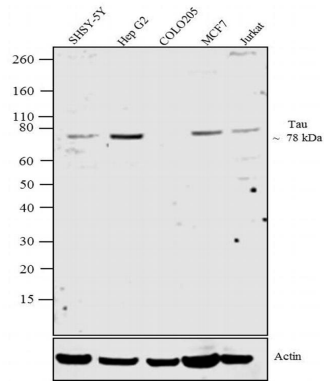
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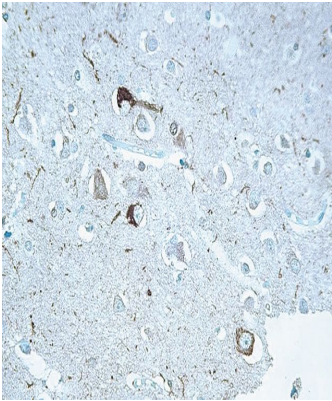
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Product Images For Tau Monoclonal Antibody (T14)



Tau Antibody (13-1400) in WB

Western blot analysis of Tau was performed by loading 20 µg of SHSY-5Y (lane1), Hep G2 (lane2), COLO205 (lane3), MCF7 (lane4) and Jurkat (lane5) cell lysates using Novex® NuPAGE® 4-12 % Bis-Tris gel (Product # NP0322BOX), XCell SureLock™ Electrophoresis System (Product # EI0002), Novex® Sharp Pre-Stained Protein Standard (LC5800), and iBlot® 2 Dry Blotting System (IB21001). Proteins were transferred to a nitrocellulose membrane and blocked with 5 % skim milk at 4°C overnight. Tau was detected at ~ 78 kDa using Tau Mouse Monoclonal Antibody (Product # 13-1400) at 2-3 µg/mL in 5 % skim milk for 3 hours at room temperature on a rocking platform. Goat Anti-Mouse - HRP Secondary Antibody (Product # 62-6520) at 1:4000 dilution was used and chemiluminescent detection was performed using Pierce™ ECL Western Blotting Substrate (Product # 32106).



Tau Antibody (13-1400) in IHC

Immunohistochemical staining of Alzheimer's disease brain tissue using Ms anti-Tau (Product # 13-1400).

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PubMed References For Tau Monoclonal Antibody (T14)

7 Western Blot References

Species / Dilution	Summary
Human / Not Cited	Annals of neurology ( 1998; 43: 259) <b>"Cognitive, neuroimaging, and pathological studies in a patient with Pick's disease."</b> Author(s):Lieberman AP,Trojanowski JQ,Lee VM,Balin BJ,Ding XS,Greenberg J,Morrison D,Reivich M,Grossman M PubMed Article URL: <a href="http://dx.doi.org/10.1002/ana.410430218">http://dx.doi.org/10.1002/ana.410430218</a>
Mouse / 1:1000	13-1400 was used in Western Blot to investigate how the expression of tau affects -syn-induced neurodegeneration in vivo (murine model), a key step in the pathogenesis of Parkinson's disease.  FASEB journal : official publication of the Federation of American Societies for Experimental Biology ( 2020; 34: 12239) <b>"Tau knockout exacerbates degeneration of parvalbumin-positive neurons in substantia nigra pars reticulata in Parkinson's disease-related -synuclein A53T mice."</b> Author(s):Jiao L,Zheng M,Duan J,Wu T,Li Z,Liu L,Xiang X,Tang X,He J,Li X,Zhang G,Ding J,Cai H,Lin X PubMed Article URL: <a href="http://dx.doi.org/10.1096/fj.202000017RR">http://dx.doi.org/10.1096/fj.202000017RR</a>
Not Applicable / Not Cited	13-1400 was used in western blot to suggest Wnt-activation occurs prior to 3 months of age in the JNPL3 mouse model of frontotemporal dementia  Neurobiology of aging ( 2009; 30: 14) <b>"Wnt-pathway activation during the early stage of neurodegeneration in FTDP-17 mice."</b> Author(s):Wiedau-Pazos M,Wong E,Solomon E,Alarcon M,Geschwind DH PubMed Article URL: <a href="http://dx.doi.org/10.1016/j.neurobiolaging.2007.05.015">http://dx.doi.org/10.1016/j.neurobiolaging.2007.05.015</a>
Human / Not Cited	Proceedings of the National Academy of Sciences of the United States of America ( 1998; 95: 13103) <b>"Pathogenic implications of mutations in the tau gene in pallido-ponto-nigral degeneration and related neurodegenerative disorders linked to chromosome 17."</b> Author(s):Clark LN,Poorkaj P,Wszolek Z,Geschwind DH,Nasreddine ZS,Miller B,Li D,Payami H,Awert F,Markopoulou K,Andreadis A,D'Souza I,Lee VM,Reed L,Trojanowski JQ,Zhukareva V,Bird T,Schellenberg G,Wilhelmsen KC PubMed Article URL: <a href="http://dx.doi.org/10.1073/pnas.95.22.13103">http://dx.doi.org/10.1073/pnas.95.22.13103</a>
Human / Not Cited	The Journal of neuroscience : the official journal of the Society for Neuroscience ( 2005; 25: 10637) <b>"Age-dependent neurofibrillary tangle formation, neuron loss, and memory impairment in a mouse model of human tauopathy (P301L)."</b> Author(s):Ramsden M,Kotilinek L,Forster C,Paulson J,McGowan E,SantaCruz K,Guimaraes A,Yue M,Lewis J,Carlson G,Hutton M,Ashe KH PubMed Article URL: <a href="http://dx.doi.org/10.1523/JNEUROSCI.3279-05.2005">http://dx.doi.org/10.1523/JNEUROSCI.3279-05.2005</a>
Mouse / Not Cited	The Journal of biological chemistry ( 1999; 274: 21464) <b>"Characterization of mouse dishevelled (Dvl) proteins in Wnt/Wingless signaling pathway."</b> Author(s):Lee JS,Ishimoto A,Yanagawa S PubMed Article URL: <a href="http://dx.doi.org/10.1074/jbc.274.30.21464">http://dx.doi.org/10.1074/jbc.274.30.21464</a>
Human / Not Cited	Journal of neuropathology and experimental neurology ( 1998; 57: 588) <b>"The neuropathology of a chromosome 17-linked autosomal dominant parkinsonism and dementia ("pallido-ponto-nigral degeneration")."</b> Author(s):Reed LA,Schmidt ML,Wszolek ZK,Balin BJ,Soontornniyomkij V,Lee VM,Trojanowski JQ,Schelper RL PubMed Article URL: <a href="http://dx.doi.org/10.1097/00005072-199806000-00006">http://dx.doi.org/10.1097/00005072-199806000-00006</a>

4 Immunohistochemistry References

Species / Dilution	Summary
Mouse / Not Cited	Science (New York, N.Y.) ( 2001; 293: 1491) <b>"Formation of neurofibrillary tangles in P301 tau transgenic mice induced by Abeta 42 fibrils."</b> Author(s):Götz J,Chen F,van Dorpe J,Nitsch RM PubMed Article URL: <a href="http://dx.doi.org/10.1126/science.1062097">http://dx.doi.org/10.1126/science.1062097</a>
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Rat / 1:1,000	13-1400 was used in Immunohistochemistry to determine whether adult onset Alzheimer's disease, spatially restricted tauopathy could be sufficient to reproduce progressive deficits in mnemonic function.  Behavioural brain research ( 2011; 216: 332) <b>"Focal expression of mutated tau in entorhinal cortex neurons of rats impairs spatial working memory."</b> Author(s):Ramirez JJ,Poulton WE,Knelson E,Barton C,King MA,Klein RL PubMed Article URL: <a href="http://dx.doi.org/10.1016/j.bbr.2010.08.013">http://dx.doi.org/10.1016/j.bbr.2010.08.013</a>

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Human / Not Cited

Mouse / Not Cited

The Journal of neuroscience : the official journal of the Society for Neuroscience ( 2005; 25: 10637)

**"Age-dependent neurofibrillary tangle formation, neuron loss, and memory impairment in a mouse model of human tauopathy (P301L)."**

Author(s):Ramsden M,Kotilinek L,Forster C,Paulson J,McGowan E,SantaCruz K,Guimaraes A,Yue M,Lewis J,Carlson G,Hutton M,Ashe KH

PubMed Article URL:<http://dx.doi.org/10.1523/JNEUROSCI.3279-05.2005>

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