

ARG10727 anti-Tau antibody [5B10]

Package: 50 µl
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [5B10] recognizes Tau
Tested Reactivity	Hu, Ms, Rat
Predict Reactivity	Chk
Tested Application	ICC/IF, IHC-Fr, WB
Host	Mouse
Clonality	Monoclonal
Clone	5B10
Isotype	IgG1
Target Name	Tau
Species	Human
Immunogen	Recombinant full length version of the shortest Human Tau isoform purified from E. coli.
Epitope	Located in the peptide HVPGGGNKKIETHKLTFRN, amino acids 362-381 of the sequence in NP_005901.2.
Conjugation	Un-conjugated
Alternate Names	TAU; Neurofibrillary tangle protein; Paired helical filament-tau; PPND; DDPAC; FTDP-17; MTBT2; Microtubule-associated protein tau; PHF-tau; MSTD; PPP1R103; MTBT1; MAPTL

Application Instructions

Application table	Application	Dilution
	ICC/IF	1:1000
	IHC-Fr	1:1000
	WB	1:10000
Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	

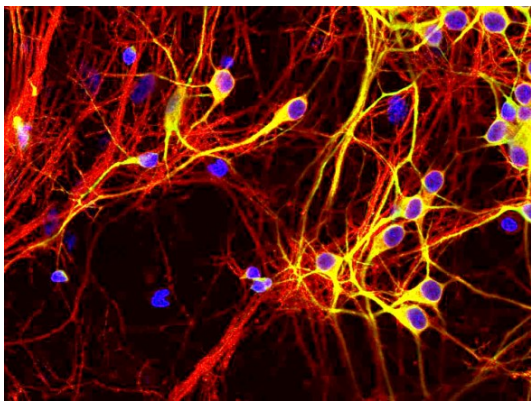
Properties

Form	Liquid
Purification	Affinity purification.
Buffer	PBS and 50% Glycerol.
Stabilizer	50% Glycerol
Concentration	1 mg/ml

Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

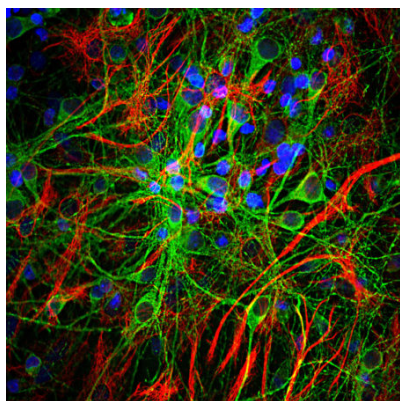
Bioinformation

Gene Symbol	MAPT
Gene Full Name	microtubule-associated protein tau
Background	This gene encodes the microtubule-associated protein tau (MAPT) whose transcript undergoes complex, regulated alternative splicing, giving rise to several mRNA species. MAPT transcripts are differentially expressed in the nervous system, depending on stage of neuronal maturation and neuron type. MAPT gene mutations have been associated with several neurodegenerative disorders such as Alzheimer's disease, Pick's disease, frontotemporal dementia, cortico-basal degeneration and progressive supranuclear palsy. [provided by RefSeq, Jul 2008]
Function	Promotes microtubule assembly and stability, and might be involved in the establishment and maintenance of neuronal polarity. 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 whereas the longer isoforms may preferentially play a role in its stabilization. [UniProt]
Research Area	Neuroscience antibody; Signaling Transduction antibody; Neuron Development Study antibody
Calculated Mw	79 kDa
PTM	<p>Phosphorylation at serine and threonine residues in S-P or T-P motifs by proline-directed protein kinases (PDPK1: CDK1, CDK5, GSK3, MAPK) (only 2-3 sites per protein in interphase, seven-fold increase in mitosis, and in the form associated with paired helical filaments (PHF-tau)), and at serine residues in K-X-G-S motifs by MAP/microtubule affinity-regulating kinase (MARK1 or MARK2), causing detachment from microtubules, and their disassembly. Phosphorylation decreases with age. Phosphorylation within tau/MAPT's repeat domain or in flanking regions seems to reduce tau/MAPT's interaction with, respectively, microtubules or plasma membrane components. Phosphorylation on Ser-610, Ser-622, Ser-641 and Ser-673 in several isoforms during mitosis. Phosphorylation at Ser-548 by GSK3B reduces ability to bind and stabilize microtubules. Phosphorylation at Ser-579 by BRSK1 and BRSK2 in neurons affects ability to bind microtubules and plays a role in neuron polarization. Phosphorylated at Ser-554, Ser-579, Ser-602, Ser-606 and Ser-669 by PHK. Phosphorylation at Ser-214 by SGK1 mediates microtubule depolymerization and neurite formation in hippocampal neurons. There is a reciprocal down-regulation of phosphorylation and O-GlcNAcylation. Phosphorylation on Ser-717 completely abolishes the O-GlcNAcylation on this site, while phosphorylation on Ser-713 and Ser-721 reduces glycosylation by a factor of 2 and 4 respectively. Phosphorylation on Ser-721 is reduced by about 41.5% by GlcNAcylation on Ser-717. Dephosphorylated at several serine and threonine residues by the serine/threonine phosphatase PPP5C.</p> <p>Polyubiquitinated. Requires functional TRAF6 and may provoke SQSTM1-dependent degradation by the proteasome (By similarity). PHF-tau can be modified by three different forms of polyubiquitination. 'Lys-48'-linked polyubiquitination is the major form, 'Lys-6'-linked and 'Lys-11'-linked polyubiquitination also occur.</p> <p>O-glycosylated. O-GlcNAcylation content is around 8.2%. There is reciprocal down-regulation of phosphorylation and O-GlcNAcylation. Phosphorylation on Ser-717 completely abolishes the O-GlcNAcylation on this site, while phosphorylation on Ser-713 and Ser-721 reduces O-GlcNAcylation by a factor of 2 and 4 respectively. O-GlcNAcylation on Ser-717 decreases the phosphorylation on Ser-721 by about 41.5%.</p> <p>Glycation of PHF-tau, but not normal brain TAU/MAPT. Glycation is a non-enzymatic post-translational modification that involves a covalent linkage between a sugar and an amino group of a protein molecule forming ketoamine. Subsequent oxidation, fragmentation and/or cross-linking of ketoamine leads to the production of advanced glycation endproducts (AGES). Glycation may play a role in stabilizing PHF aggregation leading to tangle formation in AD.</p>



ARG10727 anti-Tau antibody [5B10] ICC/IF image

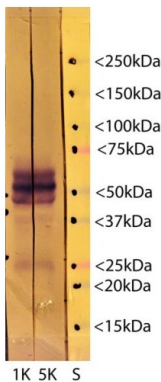
Immunocytochemistry: Rat brain cultures were grown for 10 days, fixed and stained with ARG10727 anti-Tau antibody [5B10] (red) and co-stained with chicken antibody to MAP2 (green); DNA (blue). ARG10727 anti-Tau antibody [5B10] stains the neuronal perikarya, dendrites and axonal process strongly and does not stain non neuronal cells in these cultures. The MAP2 antibody also stains neurons only, but only the perikarya and dendrites. As a result perikarya and dendrites appears yellow, since they contain both tau and MAP2, while axons appear red as they contain only tau.



ARG10727 anti-Tau antibody [5B10] ICC/IF image

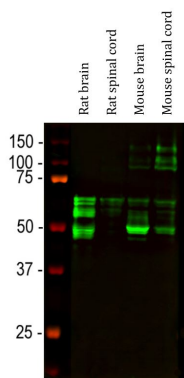
Immunofluorescence: Cortical neuron-glia cells from E20 Rat stained with ARG10727 anti-Tau antibody [5B10] (green) at 1:2000 dilution and costained with [ARG52313](#) anti-GFAP antibody (red) at 1:5000 dilution. DAPI (blue) for nuclear staining.

Clone 5B10 stains perikarya, dendrites and axons of neurons, while the GFAP antibody labels astrocytes.



ARG10727 anti-Tau antibody [5B10] WB image

Western blot: Crude Rat brain extract stained with ARG10727 anti-Tau antibody [5B10].



ARG10727 anti-Tau antibody [5B10] WB image

Western blot: Rat brain, Rat spinal cord, Mouse brain and Mouse spinal cord lysates stained with ARG10727 anti-Tau antibody [5B10] (green) at 1:2000 dilution.

Tau protein is expressed as up to 9 different isoforms of different molecular weight.