Product Data Sheet: MAP-Tau

Cat. No:	MAB-94089
Conjugate:	Unconjugated
Size:	100 ug
Clone:	2E9
Concentration:	1mg/ml
Host:	Ms
Isotype:	IgG1
Immunogen:	Immunogen: Recombinant full length 441 amino acid human
Reactivity:	Hu, Ho, Cw, Pg, Ch, Rt, Ms
Applications:	Western Blot: 1:10,000 Immunofluorescence: 1:1,000 Immunocytochemistry: 1:1,000 Immunohistochemistry: 1:1,000
Molecular Weight:	48-67kDa
Purification:	Purified
Background:	Tau is a low molecular weight member of the microtubule associated protein or MAP family. Several serious human diseases are associated with accumulations of tau protein, most notably the neurofibrillary tangles of Alzheimer's disease. Accumulations of tau in neurons are also characteristic of chronic traumatic encephalopathy, Pick's disease and several other neurodegenerative diseases. Together these disorders are known as "tauopathies". The single mammalian tau gene produces at least 9 different proteins by alternate transcription. In the central nervous system 6 isoforms ranging from 48-67kDa by SDS-PAGE predominate, though larger isotypes are seen mostly in the peripheral nervous system. The tau molecules are very heavily charged and run on SDS-PAGE much more slowly than predicted from their real molecular size. For example the smallest human tau isotype runs at 48kDa on SDS-PAGE but the real molecular weight is 32kDa. Tau proteins are substrates for ser/thr phosphorylation and other post-translational modifications. The MAB-94089 antibody was raised against a recombinant form of one of the lower molecular weight human tau isoform, specifically the human 441 amino acid htau40 form described by Goedert et al. The epitope for this antibody is located in the peptide KDRVQSKIGSLDNITHVPGG, amino acids 347-366 of the sequence in NP_005901.2. This corresponds to most of the ultimate microtubule binding peptide repeat. This sequence is expressed in all known human tau isotypes and is totally conserved in all mammals. As a result the antibody will have wide applicability. We have another mouse monoclonal antibody raised against the same form of human tau, Clone 5B10, which binds the peptide HVPGGGNKKIETHKLTFREN, immediately C-terminal to the epitope for MAB-94089. This is within the ultimate microtubule binding peptide. Both antibodies recognize the unphosphorylated forms of tau.
Form:	Liquid
Buffer:	Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN3
Storage:	Store at 4°C for short term, for longer term at -20°C. Avoid freeze / thaw cycles.

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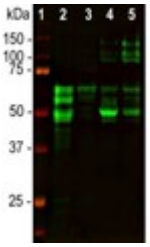
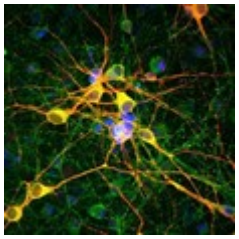
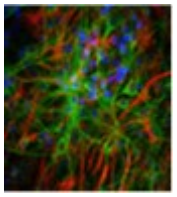


Western blot analysis of different tissue lysates using mouse mAb to MAP-τ, dilution 1:1,000 in green: [1] protein standard(red), [2] rat brain, [3] rat spinal cord, [4] mouse brain, [5] mouse spinal cord. Tau protein is expressed as up to 9 different isoforms of different molecular weight, and so appears as multiple closely spaced bands in the range from 48 kDa to 67 kDa in the CNS and including larger “big tau” forms in the PNS, visible in lane 5.



Immunofluorescent analysis of cortical neuron-glial culture from E20 rat stained with mouse mAb to MAP-τ, dilution 1:500 in green, and costained with chicken pAb to MAP2, MAP2, dilution 1:2,500 in red. The blue is DAPI staining of nuclear DNA. Tau antibody stains perikarya, dendrites and axons of neurons, while MAP2 antibody labels only dendrites and perikarya. As a result, perikarya and dendrites appear orange-yellow, since they contain both proteins.



Immunofluorescent analysis of cortical neuron-glial culture from E20 rat stained with mouse mAb to MAP-τ,dilution 1:2,000 in green, and costained with chicken pAb to GFAP, dilution1:5,000 in red. The blue is DAPI staining of nuclear DNA. MAP-TAU stains perikarya, dendrites and axons of neurons, while the GFAP antibody labels astrocytes.

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