

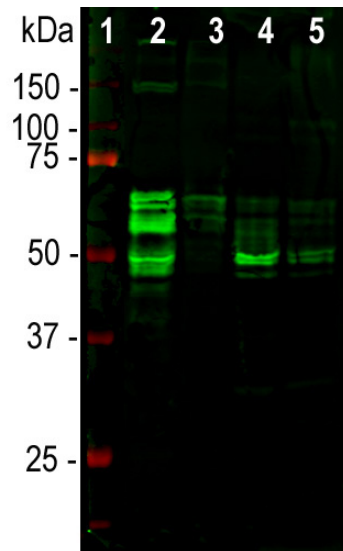
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**HGNC Name:** MAPT  
**UniProt:** P10636  
**RRID:** AB\_2572348  
**Immunogen:** Recombinant full length version of the shortest human Tau isoform purified from *E. coli*.  
**Format:** Concentrated IgY preparation in PBS plus 0.02% Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
**Storage:** Stable at 4°C for at least one year. Mix 1:1 with 100% glycerol and store at -20°C for longer term storage  
**Recommended dilutions:**  
 WB: 1:10,000. IF/ICC 1:2,000 and IHC: 1:10,000.

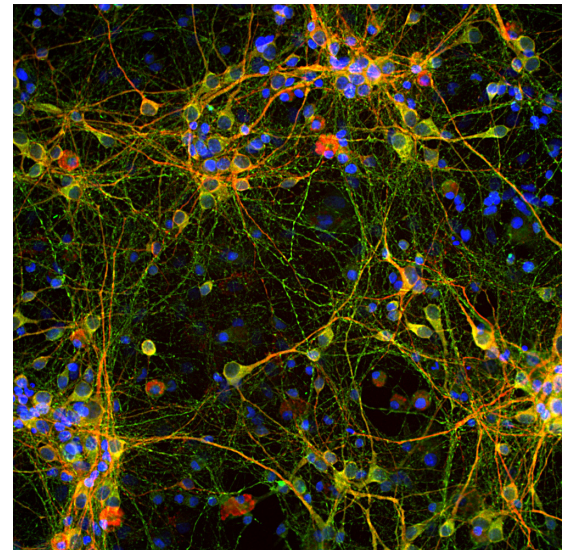
### References:

1. Weingarten, M. D., Lockwood, A. H., Hwo, S.-Y. and Kirschner, M. W. A protein factor essential for microtubule assembly. *PNAS* 72:1858-62 (1975). 2. Cleveland, D. W., Hwo, S. Y., Kirschner, M. W. Purification of tau, a microtubule-associated protein that induces assembly of microtubules from purified tubulin. *J Mol. Biol.* 116:207-25 (1977). 3. Goedert, M., Spillantini, M. G. A century of Alzheimer's disease. *Science* 314:777-81 (2006). 4. Ballatore, C., Lee, V. M., Trojanowski, J. Q. Tau-mediated neurodegeneration in Alzheimer's disease and related disorders. *Nat. Rev. Neurosci.* 8:663-72 (2007). 5. Wolfe, M. S. Tau mutations in neurodegenerative diseases. *J. Biol. Chem.* 284:6021-6025 (2009). 6. Goedert M, Spillantini MG, Crowther RA. Cloning of a big tau microtubule-associated protein characteristic of the peripheral nervous system. *PNAS* 89:1983-7 (1992). 7. Boyne LJ, Tessler A, Murray M, Fischer I. Distribution of Big tau in the central nervous system of the adult and developing rat. *J. Comp. Neurol.* 358:279-93 (1995).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Chicken		48-67kDa by SDS-PAGE	Hu, Rt, Ms, Bo, Po, Ho



Western blot analysis of tissue lysates using chicken pAb to MAP- $\tau$ , CPCA-Tau, dilution 1:10,000 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 multiple isoforms of different molecular weight, and so appears as multiple closely spaced bands in the region of the blot in the range from 48 kDa to 67 kDa.



Immunofluorescent analysis of cortical neuron-glia culture from E20 rat stained with chicken pAb to MAP- $\tau$ , CPCA-Tau, dilution 1:2,000 in green, and costained with mouse mAb to MAP2, MCA-4H5, dilution 1:1,000, in red. The blue is DAPI staining of nuclear DNA. The CPCA-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 MAP2 and tau proteins.

### 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 CPCA-Tau antibody was raised against a recombinant form of one of the lower molecular weight human tau isoform, specifically the human 441 amino acid ht40 form described by Goedert et al. We have two mouse monoclonal antibody raised against the same form of human tau, MCA-2E9 and MCA-5B10. Both antibodies recognize the unphosphorylated forms of MAP- $\tau$  and have been epitope mapped to distinct regions of the molecule. CPCA-Tau works well on western blots and IF and formalin fixed paraffin sections.

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### Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry  
 IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken  
 Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.