

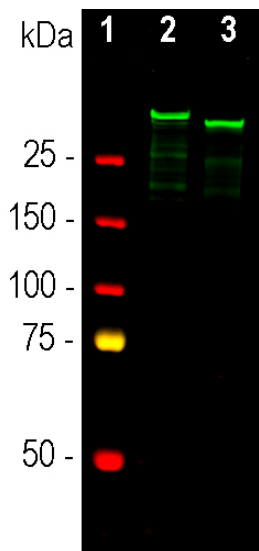
Ordering Information
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HGNC Name: MAP2
UniProt: P11137
RRID: AB_2737286
Immunogen: Recombinant human projection domain sequences, amino acids 377-1505, EnCor products [Prot-r-MAP2-P1](#), [Prot-r-MAP2-P2](#) and [Prot-r-MAP2-P3](#).
Format: Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaCl.
Storage: Store at 4°C for short term, for longer term at -20°C
Recommended dilutions:
WB: 1:2,000. IF/ICC and IHC: 1:1,000-1:2,000.

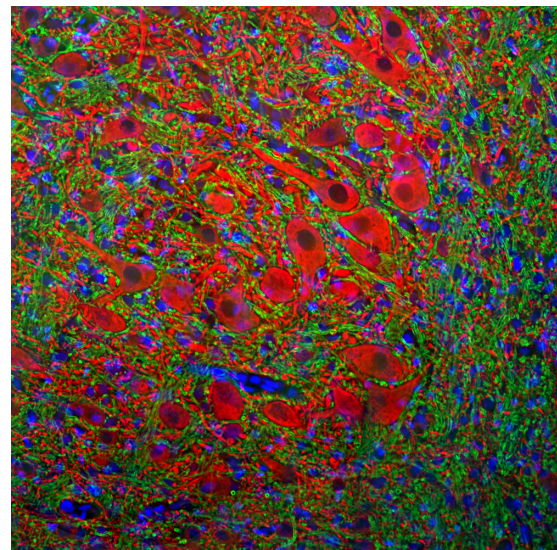
References:

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2. Nunez J. Immature and mature variants of MAP2 and tau proteins and neuronal plasticity. *Trends Neurosci.* 11:477-9 (1998).
3. 2. Vallee R. A taxol-dependent procedure for the isolation of microtubules and microtubule-associated proteins (MAPs). *J. Cell Biol.* 92:435-42 (1992).
4. Goetz AK, et al. Temporally restricted substrate interactions direct fate and specification of neural precursors derived from embryonic stem cells. *PNAS* 103:11063-8 (2006).
5. Walton NM et al. Gliotypic neural stem cells transiently adopt tumorigenic properties during normal differentiation. *Stem Cells* 27:280-9 (2009).
6. Gasser A, et al. An ankyrinG-binding motif is necessary and sufficient for targeting Nav1.6 sodium channels to axon initial segments and nodes of Ranvier. *J. Neurosci.* 32:7232-43 (2012).
7. Rush AM, et al. Differential modulation of sodium channel Nav1.6 by two members of the fibroblast growth factor homologous factor 2 subfamily. *Eur. J. Neurosci.* 23:2551-62 (2006).
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Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC	Goat		280kDa by SDS-PAGE	Hu, Rt, Ms



Western blot analysis of whole brain lysates using goat pAb to MAP2, GPCA-MAP2, dilution 1:5,000 in green: [1] protein standard (red), [2] rat, and [3] mouse brain lysate. A band at about 280kDa corresponds to the MAP2A and MAP2B proteins.



Immunofluorescent analysis of rat brain stem section stained with goat pAb to MAP2, GPCA-MAP2, dilution 1:2,000 in red, and costained with mouse mAb to MBP, [MCA-7D2](#), dilution 1:5,000, in green. Following transcardial perfusion of rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45μM, and free-floating sections were stained with above antibodies. The GPCA-MAP2 antibody labels MAP2 protein in the perikarya and dendrites of the most neurons, notably motoneurons in the brain stem, and the MBP antibody stains myelin sheath around axons.

Background:

Microtubules are 25nm diameter protein rods found in most kinds of eukaryotic cells and are associated with a family of proteins called microtubule associated proteins (MAPs). MAPs play a crucial role in the regulation of microtubule dynamics and interactions *in vivo*. MAP2 was originally named as one of the higher molecular weight MAPs with an SDS-PAGE molecular weight of about 280kDa (1-3). There is a single mammalian MAP2 gene which may generates two high molecular weight proteins of ~280kDa name MAP2A and MAP2B and multiple lower molecular weight forms usually named MAP2C and MAP2D which run on SDS-PAGE gels at 60-70kDa. The lower molecular weight forms are found in neurons early in development, but later are replaced by the higher molecular weight forms (2). The MAP2A and MAP2B forms include a protein insert missing in MAP2C and MAP2D which forms fine filamentous protrusions from the sides of brain microtubules referred to as the "projection domain". This antibody was made against the projection domain sequences and so is specific for MAP2A and MAP2B. MAP2 isoforms are expressed only in neuronal perikarya and dendrites so appropriate antibodies are used to identify neurons and dendrites in cell culture and sections (for example 4-8 used EnCor MAP2 antibodies).

The GPCA-MAP2 antibody was made against a mixture of recombinant human projection domain sequences, amino acids 377-1505, EnCor products [Prot-r-MAP2-P1](#), [Prot-r-MAP2-P2](#) and [Prot-r-MAP2-P3](#). It binds to the MAP2A and MAP2B isoforms but not the MAP2C and MAP2D which lack projection domain sequences. EnCor markets a mouse monoclonal antibody specific for sequence found in all MAP2 isoforms, [MCA-2C4](#), and also monoclonal antibodies binding epitopes only in MAP2A/B [MCA-4H5](#) and [MCA-5H11](#). We also market chicken and rabbit polyclonal antibodies to MAP2A/B with properties similar to this goat antibody, [CPCA-MAP2](#) and [RPCA-MAP2A/B](#).

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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*.