

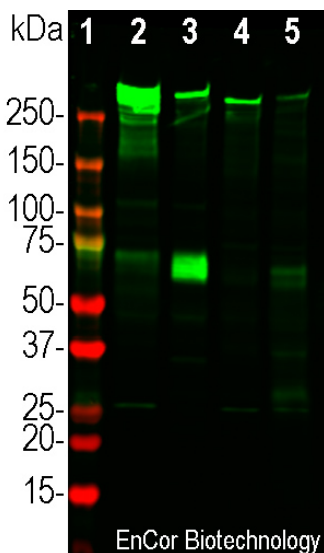
Ordering Information
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HGNC Name: MAP2
UniProt: P11137
RRID: AB_3083051
Immunogen: Full length recombinant human MAP2D protein Prot-r-MAP2D expressed in and purified from *E. coli*.
Format: Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaCl,
Storage: Stable at 4°C for one year, for longer term store at -20°C
Recommended dilutions:
 WB: 1:10,000-20,000. IF/ICC 1:2,000-5,000. IHC: 1:4,000

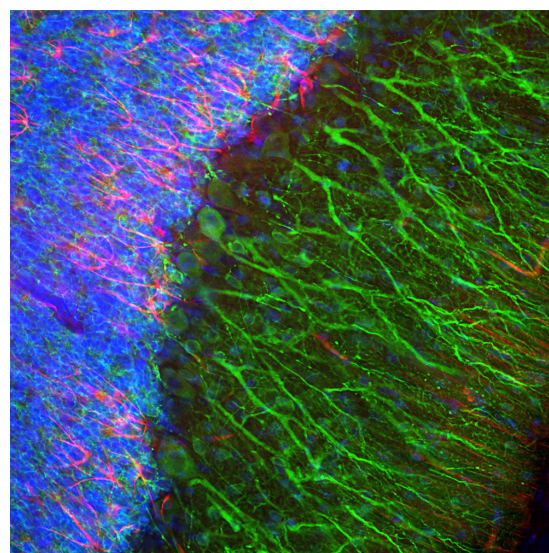
References:

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Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Rabbit		MAP2A/B ~280 kDa, MAP2C/D ~70kDa by SDS-PAGE	Hu, Rt, Ms



Western blot analysis of different tissue lysates using rabbit pAb to Microtubule Associated Protein 2D (MAP2D), RPCA-MAP2D, dilution 1:20,000 in green: [1] protein standard (red) and extracts of [2] adult rat brain, [3] E20 rat brain, [4] adult mouse brain, and [5] cow cerebellum. Strong band at about 280 kDa mark corresponds to two major high molecular isoforms of MAP2 protein referred to as MAP2A and MAP2B. The band at about 70kDa represents the MAP2D isotype detected exclusively in the embryonic developing brain, which in later development is replaced by MAP2A and MAP2B.



Immunofluorescent analysis of a section of cerebellum from an adult rat stained with rabbit pAb to Microtubule Associated Protein 2D (MAP2D), RPCA-MAP2D, dilution 1:2,000 in green, and costained with mouse mAb to Glial Fibrillary Acidic Protein (GFAP), MCA-5C10, dilution 1:1,000 in red. The blue is Hoechst staining of nuclear DNA. The MAP2 antibody stains dendrites and perikarya of neurons, while the GFAP antibody labels network of astrocytic glial cells.

Background:

Microtubules are 25nm diameter protein rods found in most 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 generate two high molecular weight proteins of ~280kDa on SDS-PAGE named 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 as the animal matures they are replaced by the higher molecular weight forms (1,2). MAP2 isoforms are expressed only in neurons in perikarya and dendrites, so MAP2 antibodies are useful for identifying neurons in cell culture and sectioned material (4-8). MAP2C and D contain an "intrinsically unstructured region", one of the prototypes for this widespread type of protein sequence (9). Since MAP2C and D are expressed earlier in development than MAP2A and B this antibody can be used for monitoring early neuronal development, though it is also useful as a general marker for neurons and dendrites in mature tissues.

This antibody was made against a recombinant full length form of human MAP2D and was found, as expected, to bind all four MAP2 gene products since it binds to the shared core region of all these molecules. The antibody will therefore recognize both the low molecular weight forms of MAP2 seen in development as well as the larger forms seen in the mature CNS. As shown here, the antibody works well for western blotting, IF, ICC and IHC. EnCor markets mouse monoclonal antibodies specific for MAP2A and MAP2B MCA-4H5 and MCA-5H11. EnCor also markets chicken and goat polyclonal antibodies to MAP2, CPCA-MAP2 and GPCA-MAP2.

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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.

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