

Ordering Information

Web www.encorbio.com
 Email admin@encorbio.com
 Phone 352-372-7022

HGNC name: [MAP2](#)

RRID: [AB_2138173](#)

Host Species: Chicken

Immunogen: Projection domain sequence of recombinant human MAP2, amino acids 377-1505.

Immunogen is comprised of three protein constructs: [Prot-r-MAP2-P1](#), [Prot-r-MAP2-P2](#) and [Prot-r-MAP2-P3](#).

Format: IgY preparation, 21 mg/mL in PBS, 5mM Na₂S

Storage: Store at 4°C.

Recommended dilutions:

WB: 1:20,000-1:50,000

IF/IHC: 1:5,000-1:10,000

Application notes:

References:

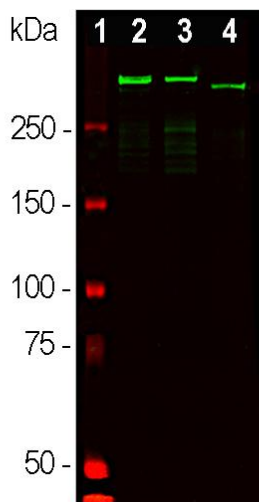
- Dehmelt, H and Halpain, S. The MAP2/Tau family of microtubule-associated proteins. [Genome Biol. 6:204 \(2005\)](#)
- Goetz AK et al. Temporally restricted substrate interactions direct fate and specification of neural precursors derived from embryonic stem cells. [Proc Natl Acad Sci U S A. 103:11063-11068 \(2006\)](#)
- Walton NM et al. Gliotypic neural stem cells transiently adopt tumorigenic properties during normal differentiation. [Stem Cells 27:280-289 \(2009\)](#)

MAP2

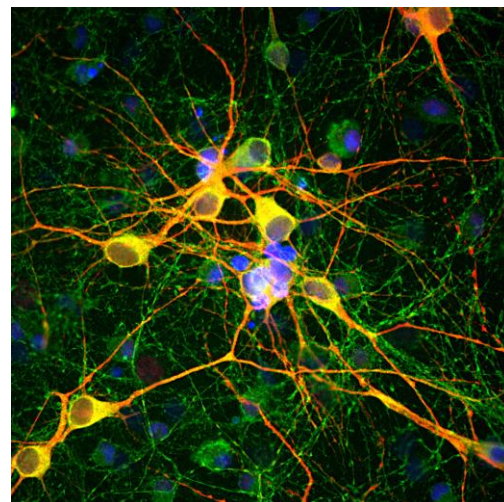
Chicken pAb

CPCA-MAP2

Applications	Host	Isotype	Molecular Wt.	Cross-Reactivity
WB, ICC/IF, IHC	Ch	IgY	280 kDa	H, R, M, C



Western blot analysis of whole brain tissue lysates using chicken pAb to Microtubule Associated Protein 2 (MAP2), CPCA-MAP2, dilution 1:50,000 in green: [1] protein standard (red), [2] adult rat brain, [3] embryonic E20 rat brain, [4] adult mouse brain. Strong band at about 280 kDa mark corresponds to two major isoforms of MAP2 protein referred to as MAP2A and MAP2B. Smaller fragments of these isoforms are also detected if the antibody is used at higher concentrations.



Immunofluorescent analysis of cortical neuron-glia cell culture from E20 rat stained with chicken pAb to Microtubule Associated Protein2 (MAP2), CPCA-MAP2, dilution 1:10,000 in red, and mouse mAb to tau (MAPT), [MCA-2E9](#), dilution 1:2,000 in green. The blue is DAPI staining of nuclear DNA. MAP2 antibody stains dendrites and perikarya of neurons, while MCA-2E9 antibody labels the neuronal perikarya, dendrites and axonal process. As a result, perikarya and dendrites appear orange-yellow, since they contain both MAP2 and tau proteins.

Background

Microtubules are 25 nanometer diameter cytoskeletal structures found in most eukaryotic cells. They are formed by the polymerization of two globular proteins, α - and β -tubulin. Microtubules 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*.

The originally identified MAPs from brain tissue can be classified into two groups based on their molecular weight. The first group comprises MAPs with a molecular weight of 55-62 kDa, and were named τ (tau) proteins. The second group includes MAPs with much higher molecular weights of 200kDa and above and were named MAP1, MAP2, MAP3, MAP4 and MAP5. Further characterization showed that MAP2 and τ proteins were related in protein sequence and both have microtubule-binding peptide repeats near the C-terminus (1). There is a single mammalian MAP2 gene which may generate multiple lower molecular weight forms usually named MAP2C and MAP2D which run on SDS-PAGE gels at 60-70 kDa. These forms are found in neurons early in development, but as the animal matures they are replaced by MAP2A and MAP2B, which appear at ~280kDa on SDS-PAGE gels. The MAP2A and MAP2B forms include a long sequence which forms fine filamentous protrusions on brain microtubules, and therefore it is referred to as the projection domain.

MAP2 isoforms are expressed only in neurons, specifically in the perikarya and dendrites of these cells. Antibodies to MAP2 are therefore excellent markers of neuronal dendrites and are useful for identifying neurons in cell culture and sections.

The immunogen for this antibody is comprised of three protein constructs spanning the projection domain of human MAP2 (amino acids 377-1505), which are commercially available EnCor products [Prot-r-MAP2-P1](#), [Prot-r-MAP2-P2](#), and [Prot-r-MAP2-P3](#). This antibody is specific for MAP2A and MAP2B, the high molecular weight forms of MAP2. The [HGNC](#) name for this protein is [MAP2](#).

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Abbreviation Key:

mAb—monoclonal antibody pAb—polyclonal antibody WB—Western IF—Immunofluorescence IHC—Immunohistochemistry ICC—Immunocytochemistry E—ELISA H—human M—mouse R—rat Ch—chicken C—cow D—dog P—pig