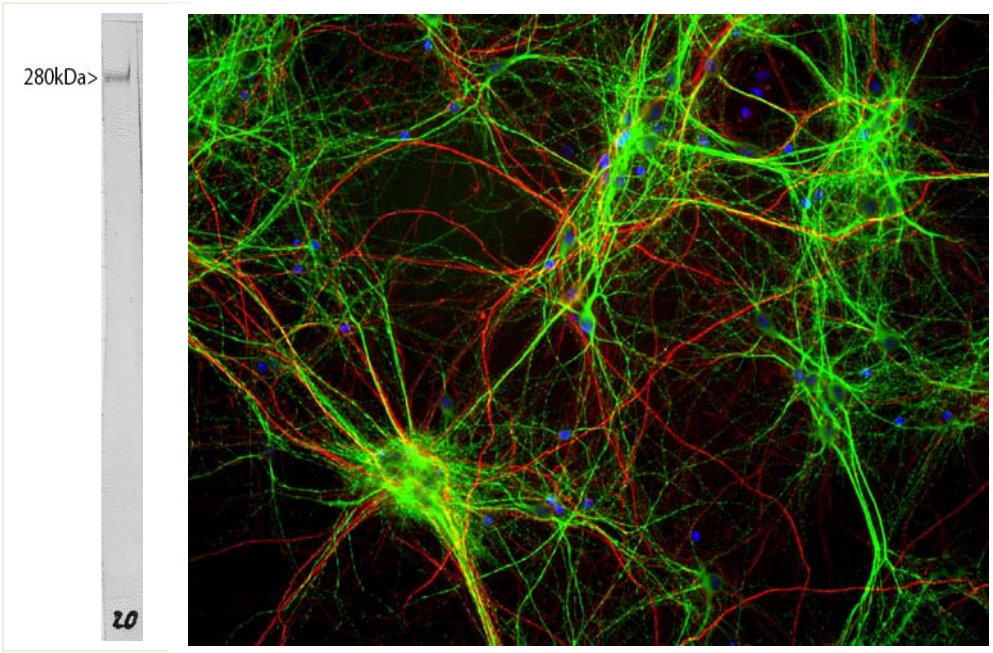
4949 SW 41st Blvd.
Suites 40 & 50
Gainesville, FL 32608
Tel: (352) 372 7022
Fax: (352) 372 7066
admin@encorbio.com

Catalogue# MCA-5H11: Mouse Monoclonal Antibody to Microtubule Associated Protein 2 (MAP2)

The Immunogen: Microtubules are 25nm diameter protein rods found in most kinds of eukaryotic cells. They are polymerized from a dimeric subunit made of one a subunit and one b tubulin subunit. Microtubules are associated with a family of proteins called microtubule associated proteins (MAPs), which includes the protein t (tau) and a group of proteins referred to as MAP1, MAP2, MAP3, MAP4 and MAP5 (2). MAP2 is made up of two ~280 kDa apparent molecular weight bands referred to as MAP2a and MAP2b. A third lower molecular weight form, usually called MAP2c, corresponds to a pair of protein bands running at ~70 kDa on SDS-PAGE gels, and is expressed early in development. All these MAP2 forms are derived from a single gene by alternate transcription, and all share a C-terminal sequence which includes either three or four microtubule binding peptide sequences, which are very similar to those found in the related microtubule binding protein t (tau). MAP2 isoforms are expressed only in neuronal cells and specifically in the perikarya and dendrites of these cells. Antibodies to MAP2 are therefore excellent markers on neuronal cells, their perikarya and neuronal dendrites. In contrast t (tau) is found predominantly in neuronal axons. The HGNC name for this protein is MAP2.



Left: Western blot of whole rat brain lysate probed with MCA-5H11 antibody to MAP2. Note that the strong single band running at about 280Kda corresponds to MAP2. **Right:** Mixed neuron/glia cultures stained with MCA-5H11 (green) and also rabbit antibody of neurofilament NF-H RPCA-NF-H (red). Since the NF-H protein is largely expressed in neuronal axons, while the MAP2 is only found in neuronal dendrites and perikarya, there is little overlap between these two staining patterns. DNA stain shows nuclei of neurons and non-neuronal cells (blue).

Antibody characteristics: MCA-5H11 is a mouse IgG2b class antibody with a κ light chain. MCA-5H11 is so far known to work on rat, mouse, human and cow tissues. It was made against a high molecular MAP protein preparation derived from bovine brain essentially as described by Vallee (2).

Suggestions for use: The antibody solution is affinity purified from tissue culture supernatant and is at concentration of 1 mg/mL in phosphate buffered saline preparation containing 10 mM sodium azide preservative (Link to http://www.encorbio.com/MSDS/azide.htm for Material Safety Data Sheet). The antibody solution can be used at dilutions of at least 1:1,000 in immunofluorescence experiments. In western blotting using

chemiluminescence it can be used at dilutions of 1:10,000 or lower. Avoid repeated freezing and thawing, store at 4°C or -20°C.

OMIM Link: http://omim.org/entry/157130

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.

References:

1. Dehmelt L, Halpain S. The MAP2/Tau family of microtubule-associated proteins. Genome Biol. 6:204 (2004)

2. Vallee R. A taxol-dependent procedure for the isolation of microtubules and microtubule-associated proteins (MAPs). J. Cell Biol. 92:435-442 (1992)