Product Data Sheet: MAP-2a,b,c,d

Cat. No:	MAB-83910
Conjugate:	Unconjugated
Size:	100 ug
Clone:	2C4
Concentration:	1mg/ml
Host:	Ms
Isotype:	IgG1
Immunogen:	Full length recombinant human MAP2D protein Prot-r-MAP2D expressed in and purified from E. coli.
Reactivity:	Hu Rt Ms
Applications:	Western Blot: 1:5,000-1:10,000 Immunohistochemistry: 1:5,000-10,000 Immunofluorescence: 1:5,000-10,000 Immunocytochemistry: 1:5,000-10,000
Molecular Weight:	MAP2A/B ~280 kDa, MAP2C/D ~70kDa by SDSPAGE
Purification:	Purified
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. There is a single mammalian MAP2 gene which may generates 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. MAP2 isoforms are expressed only in neurons in perikaryal and dendrites, so MAP2 antibodies are useful for identifying neurons in cell culture and sectioned material. MAP2C and D contain an “intrinsically unstructured region”, one of the prototypes for this widespread type of protein sequence. 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 to bind all four MAP2 gene products meaning that it binds to the shared core region of these molecules.
Form:	Liquid
Buffer:	Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN3
Storage:	Stable at 4°C for one year, for longer term store at -20°C

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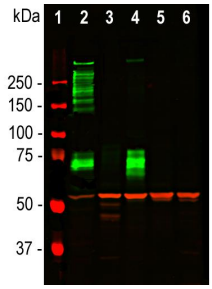
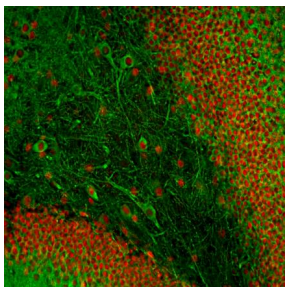


Western blot analysis of tissue and cell lysates using mouse mAb to MAP2C/D, MAP2 A/B/C/D , dilution 1:5,000 in green, and chicken pAb to vimentin, dilution 1:5,000 in red. [1] protein standard (red), [2] rat whole brain lysate, [3] HeLa, [4] SH-SY5Y, [5] HEK293 and [6] NIH-3T3 cell lysates. A band at about 280kDa is full length intact MAP2A/2B isotypes while bands at about 70kDa represent MAP2C/D isotypes. Multiple bands in between are likely in vivo fragments of MAP2A/B. Only the SH-SY5Y cells, which have neuronal properties express MAP2 protein. The Vim antibody binds to a single band at ~50kDa present in all preparations.



Immunofluorescent analysis of adult rat hippocampus section stained with mouse mAb to MAP2A/B/C/D, MAP2 A/B/C/D dilution 1:5,000 in green, and chicken pAb to FOX2, FOX2 dilution 1:2,000, in red. 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. MAP2 A/B/C/D antibody labels all MAP2 protein isotypes expressed in neuronal perikarya and dendrites.
The FOX2 antibody stains the nuclei of most neuronal cells.