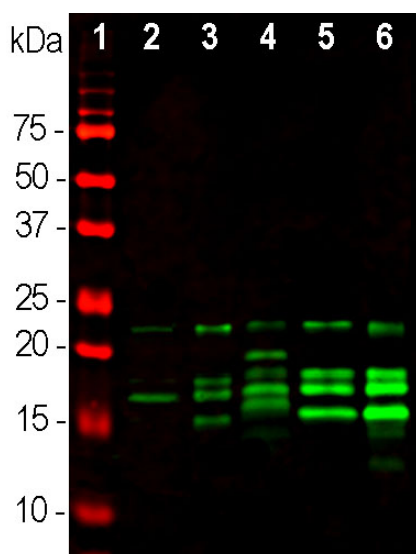


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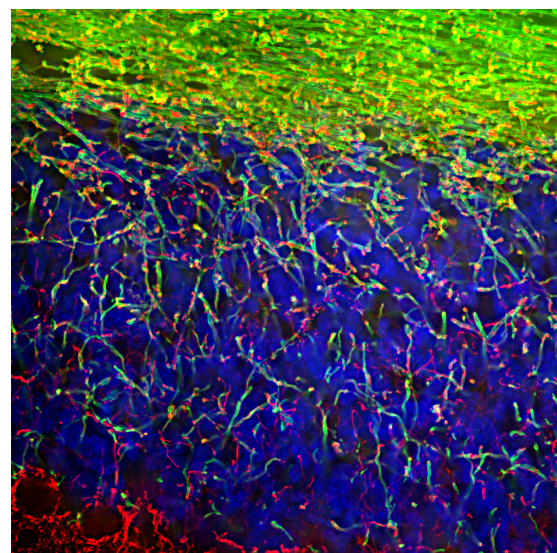
HGNC Name: MBP
UniProt: P02687
RRID: AB_2572352
Immunogen: Purified myelin basic protein isolated from bovine brain
Format: Concentrated IgY preparation in PBS plus 0.02% Na₂S₂O₃
Storage: Store at 4°C.
Recommended dilutions:
WB: 1:10,000. IF/ICC 1:2,000 and IHC: 1:20,000.

References:
1. Eylar EH, et al. Basic A1 protein of the myelin membrane. The complete amino acid sequence. *J. Biol. Chem.* 246:5770-84 (1971). 2. Marty MC, et al. The myelin basic protein gene is expressed in differentiated blood cell lineages and in hemopoietic progenitors. *PNAS* 99:8856-61 (2002). 3. Libbey JE, Fujinami RS. Experimental Autoimmune Encephalomyelitis as a Testing Paradigm for Adjuvants and Vaccines. *Vaccine* 29:3356-62 (2011). 4. Wucherpfennig KW, Strominger JL. Molecular mimicry in T cell-mediated autoimmunity: Viral peptides activate human T cell clones specific for myelin basic protein. *Send to Cell* 80:695-705 (1995). 5. Berger RP, et al. Serum neuron-specific enolase, S100B, and myelin basic protein concentrations after inflicted and noninflicted traumatic brain injury in children. *J. Neurosurg.* 103:61-8 (2005).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Chicken		14, 17, 18.5 and 21.5kDa in rodent	Hu, Rt, Ms, Co, Pi



Western blot analysis of different tissue lysates using chicken pAb to MBP, CPCA-MBP, dilution 1:10,000 in green: [1] protein standard (red), [2] rat brain, [3] rat spinal cord, [4] rat sciatic nerve, [5] mouse brain, and [6] mouse spinal cord. Multiple bands between 14-21.5kDa correspond to various alternate transcripts of the single MBP gene.



Immunofluorescent analysis of rat brain cerebellum section stained with chicken pAb to Myelin Basic Protein (MBP), CPCA-MBP, dilution 1:5,000 in green, and costained with rabbit pAb to NF-L, RPCA-NF-L, dilution 1:5,000 in red. The MBP antibody stains oligodendrocytes and myelin sheaths around axons, while the NF-L antibody labels dendrites and axons of neuronal cells.

Background:

Myelin Basic Protein (MBP) is one of the major proteins of the myelin sheath surrounding axons in the nervous system. Since it is of relatively low molecular weight and high abundance the protein sequence was determined from purified protein over 30 years ago (1). The protein is made by oligodendrocytes in the central and nervous system, so antibodies to MBP are good markers of this cell type. In the peripheral nervous system MBP is expressed by myelinating Schwann cells so this antibody can be used to identify these cells in culture or sections. In the central nervous system four different forms of the protein made by alternate transcription from a single gene, the protein products having molecular weights of 21.5, 20.5, 18.5, and 17.2kDa in humans. The single gene of rodents also produces 4 different proteins, but of slightly different sizes, 21.5, 18.5, 17 and 14kDa. Some interest has focused on MBP as a potentially significant auto-antigen involved in mouse models of multiple sclerosis (MS, 3) and in human patients (4). Detection of MBP released into blood and CSF has some potential as a surrogate biomarker of demyelination and axonal loss in MS and other relevant damage and disease states (e.g. 5). The CPCA-MBP antibody was made against a preparation of MBP purified from bovine brain. It can be used to identify oligodendrocytes and Schwann cells in neural cell culture, to visualize myelin sheaths and myelinating cells in sections and to probe western blots for MBP gene products. The antibody is also rather insensitive to aldehyde fixation and so can be used in immunohistochemistry of paraffin sections. The antibody binds all four of isoforms of MBP on western blots. In contrast our mouse monoclonal [MCA-7D2](#) binds only the 21.5kDa and 18.5kDa rat isoforms, mapping the epitope to the product on one exon, while our [MCA-7G7](#) binds all four isoforms. We also market a goat polyclonal antibody to MBP [GPCA-MBP](#). A sequence alignment of the four CNS MBP isotypes in human and rat can be downloaded from [here](#).

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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*.