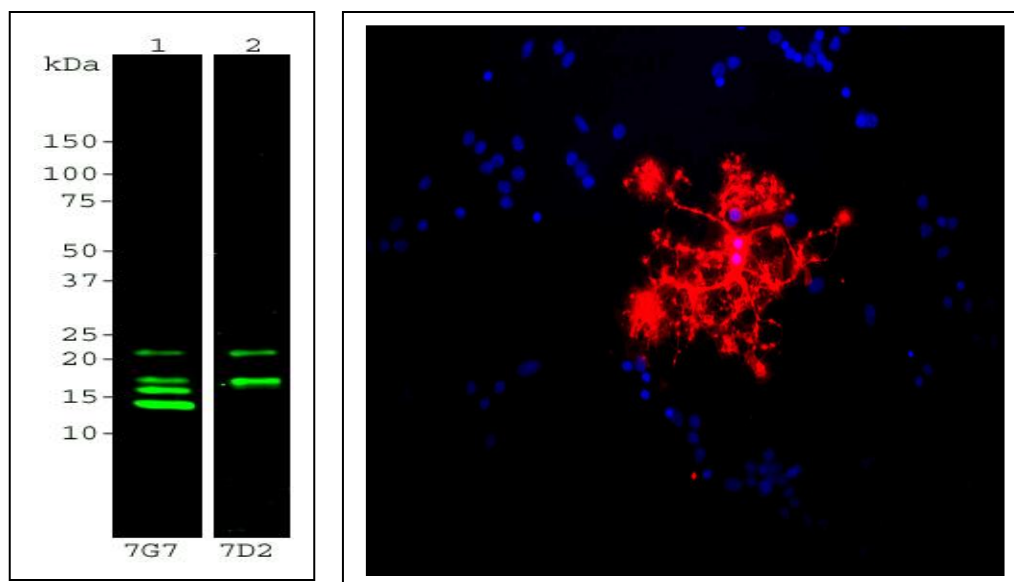


Catalogue MCA-7G7: Mouse Monoclonal Antibody to Myelin Basic Protein

The Immunogen: 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 nervous system, so antibodies to MBP are good markers of this cell type. However, transcripts from the same gene are also expressed in certain hematopoietic lineage cells (2). In this case the proteins are referred to as Golli-MBP proteins and result from the use of 3 exons not utilized in the nervous system, resulting in proteins with unique N-terminal regions.

In the central nervous system there are four different forms of the protein made by alternate transcription from a single gene, which have molecular weights of 21.5, 20.5, 18.5, and 17.2 kDa in humans. The single gene of rodents also produces 4 different proteins, but of slightly different sizes, 21.5, 18.5, 17 and 14 kDa. Sequence alignments of both human and rodent isotypes can be downloaded from [here](#). We have found that MCA-7G7 and our chicken antibody, [CPCA-MBP](#), stain all four transcripts on blots, whereas our mouse monoclonal [MCA-7D2](#) binds only the 21.5 kDa and 18.5 kDa isotypes. The [HGNC](#) name for this protein is [MBP](#).



Figures: Blots of 20µg crude rat brain homogenate blotted with 2 MBP antibodies; MCA-7G7 (lane 1) at 1:5,000 and [MCA-7D2](#) (lane 2) at 1:5,000 dilutions. MCA-7G7 bind all four transcripts: 21.5kDa, 18.5kDa, 17kDa and 14kDa, while [MCA-7D2](#) monoclonal binds the largest 21.5 kDa and 18.5 kDa transcripts preferentially. **Right:** shows rat mixed neuron/glial cultures stained with Myelin Basic Protein monoclonal antibody MCA-7G7 (red). Blue is a DNA stain. Note that the Myelin Basic Protein antibody stains an oligodendrocyte and some membrane shed from this cell. Other cells in the field include neurons, astrocytes, microglia and fibroblasts, all of which are completely negative.

Antibody Characteristics: MCA-7G7 was raised against purified myelin basic protein isolated from cow nerve. The antibody belongs to an IgG1 isotype. MCA-7G7 is supplied as an aliquot of ascites fluid.

Suggestions for use: Try at dilutions of 1:1,000 and higher for immunofluorescence. For western blots try at 1:5,000. A suitable control tissue is rat spinal cord or brain homogenates. The major isoforms of MBP recognized by MCA-7G7 run as 21.5, 18.5, 17 and 14 kDa in rat brain lysate.

Omim link: <http://www.ncbi.nlm.nih.gov/omim/159430>

References:

1. Eylar EH, Brostoff S, Hashim G, Caccam J, Burnett P. Basic A1 protein of the myelin membrane. The complete amino acid sequence. [J. Biol. Chem. 246:5770-5784 \(1971\).](#)

2. Marty MC, Alliot F, Rutin J, Fritz R, Trisler D. and Pessac B. The myelin basic protein gene is expressed in differentiated blood cell lineages and in hemopoietic progenitors. [Proc. Nat. Acad. Sci. 99:8856-8861 \(2002\).](#)

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

©EnCor Biotechnology Inc. November 25, 2015.