ARG10723
anti-Myelin Basic Protein antibody [7G7]

Package: 50 µl
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [7G7] recognizes Myelin Basic Protein
Tested Reactivity	Hu, Ms, Rat, Cow, Hrs, Pig
Predict Reactivity	Chk
Tested Application	ICC/IF, IHC-Fr, WB
Host	Mouse
Clonality	Monoclonal
Clone	7G7
Isotype	IgG1
Target Name	Myelin Basic Protein
Species	Cow
Immunogen	Purified myelin basic protein isolated from cow nerve.
Conjugation	Un-conjugated
Alternate Names	Myelin A1 protein; MBP; Myelin membrane encephalitogenic protein; Myelin basic protein

Application Instructions

Application table

Application	Dilution
ICC/IF	1:1000
IHC-Fr	1:1000
WB	1:5000 - 1:10000

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

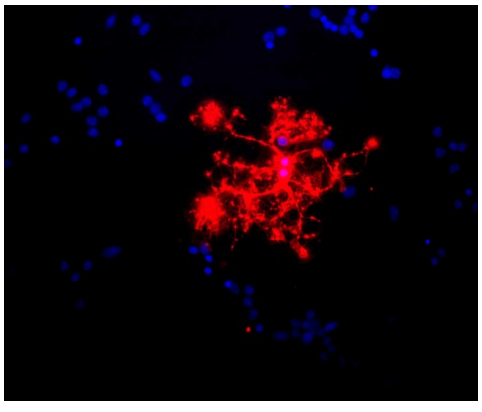
Form	Liquid
Purification	Affinity purification.
Buffer	PBS and 50% Glycerol.
Stabilizer	50% Glycerol
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

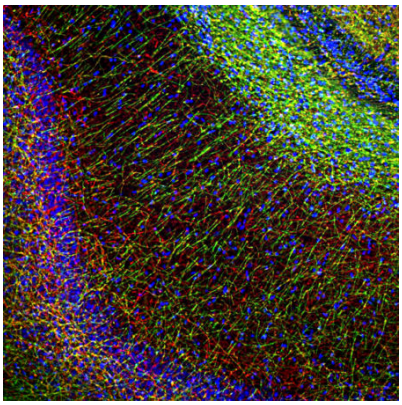
Gene Symbol	MBP
Gene Full Name	myelin basic protein
Background	The protein encoded by the classic MBP gene is a major constituent of the myelin sheath of oligodendrocytes and Schwann cells in the nervous system. However, MBP-related transcripts are also present in the bone marrow and the immune system. These mRNAs arise from the long MBP gene (otherwise called "Golli-MBP") that contains 3 additional exons located upstream of the classic MBP exons. Alternative splicing from the Golli and the MBP transcription start sites gives rise to 2 sets of MBP-related transcripts and gene products. The Golli mRNAs contain 3 exons unique to Golli-MBP, spliced in-frame to 1 or more MBP exons. They encode hybrid proteins that have N-terminal Golli aa sequence linked to MBP aa sequence. The second family of transcripts contain only MBP exons and produce the well characterized myelin basic proteins. This complex gene structure is conserved among species suggesting that the MBP transcription unit is an integral part of the Golli transcription unit and that this arrangement is important for the function and/or regulation of these genes. [provided by RefSeq, Jul 2008]
Function	The classic group of MBP isoforms (isoform 4-isoform 14) are with PLP the most abundant protein components of the myelin membrane in the CNS. They have a role in both its formation and stabilization. The smaller isoforms might have an important role in remyelination of denuded axons in multiple sclerosis. The non-classic group of MBP isoforms (isoform 1-isoform 3/Golli-MBPs) may preferentially have a role in the early developing brain long before myelination, maybe as components of transcriptional complexes, and may also be involved in signaling pathways in T-cells and neural cells. Differential splicing events combined with optional post-translational modifications give a wide spectrum of isomers, with each of them potentially having a specialized function. Induces T-cell proliferation. [UniProt]
Calculated Mw	33 kDa
PTM	Several charge isomers of MBP; C1 (the most cationic, least modified, and most abundant form), C2, C3, C4, C5, C6, C7, C8-A and C8-B (the least cationic form); are produced as a result of optional PTM, such as phosphorylation, deamidation of glutamine or asparagine, arginine citrullination and methylation. C8-A and C8-B contain each two mass isoforms termed C8-A(H), C8-A(L), C8-B(H) and C8-B(L), (H) standing for higher and (L) for lower molecular weight. C3, C4 and C5 are phosphorylated. The ratio of methylated arginine residues decreases during aging, making the protein more cationic. The N-terminal alanine is acetylated (isoform 3, isoform 4, isoform 5 and isoform 6). Arg-241 was found to be 6% monomethylated and 60% symmetrically dimethylated. Phosphorylated by TAOK2, VRK2, MAPK11, MAPK12, MAPK14 and MINK1.

Images



ARG10723 anti-Myelin Basic Protein antibody [7G7] ICC/IF image

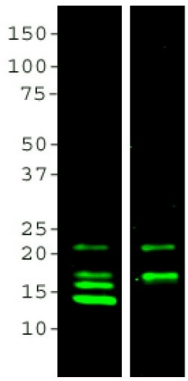
Immunocytochemistry: Rat mixed neuron / glial cultures stained with ARG10723 anti-Myelin Basic Protein antibody [7G7] (red). Blue is a DNA stain. Note that the Myelin Basic Protein antibody stains an oligodendrocyte and some membrane shed from this cell. Other cells in the field include neurons, astrocytes, microglia and fibroblasts, all of which are completely negative.



ARG10723 anti-Myelin Basic Protein antibody [7G7] IHC-Fr image

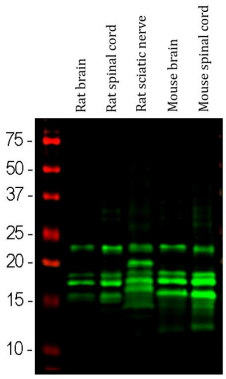
Immunohistochemistry: Frozen section of Rat hippocampus stained with ARG10723 anti-Myelin Basic Protein antibody [7G7] (green) at 1:5000 dilution and costained with ARG10761 anti-Neurofilament NF-H antibody (red) at 1:2000 dilution.

The Myelin Basic Protein antibody stains oligodendrocyte cell bodies and the myelin sheathes around axons, while the NF-H antibody labels the axons themselves.



ARG10723 anti-Myelin Basic Protein antibody [7G7] WB image

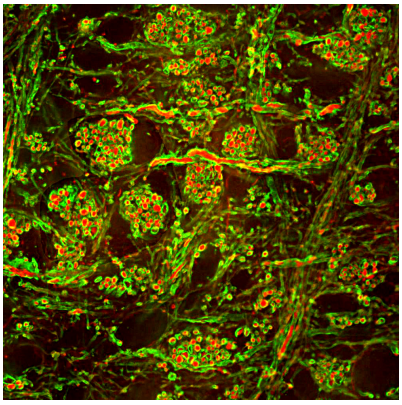
Western blot: 20 µg of crude Rat brain homogenate stained with two MBP antibodies; ARG10723 anti-Myelin Basic Protein antibody [7G7] (lane 1) at 1:5000 and Clone 7D2 (lane 2) at 1:5000. MCA-7G7 bind all four transcripts: 21.5 kDa, 18.5 kDa, 17 kDa and 14 kDa, while MCA-7D2 monoclonal binds the largest 21.5 kDa and 18.5 kDa transcripts preferentially.



ARG10723 anti-Myelin Basic Protein antibody [7G7] WB image

Western blot: Rat brain, Rat spinal cord, Rat sciatic nerve, Mouse brain and Mouse spinal cord lysates stained with ARG10723 anti-Myelin Basic Protein antibody [7G7] (green) at 1:20000 dilution.

Multiple bands at 14 kDa, 17 kDa, 18.5 kDa to 21.5 kDa are the alternate transcripts of MBP. Other bands are proteolytic fragments of the MBP protein.



ARG10723 anti-Myelin Basic Protein antibody [7G7] IHC-Fr image

Immunohistochemistry: Frozen section of Rat brain stem stained with ARG10723 anti-Myelin Basic Protein antibody [7G7] (green) at 1:5000 dilution and costained with ARG10761 anti-Neurofilament NF-H antibody (red) at 1:2000 dilution.

The Myelin Basic Protein antibody stains oligodendrocytes and the myelin sheathes around axons. In this high magnification view it is clear that the NF-H antibody labels axons within the myelin sheathes.