Human PLP Antibody

Monoclonal Mouse IgM Clone # O10
Catalog Number: MAB6310

DESCRIPTION

Species Reactivity	Human
Specificity	Detects Surface Proteolipid in immunocytochemistry.
Source	Monoclonal Mouse IgM Clone # O10
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	White matter from bovine corpus callosum
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

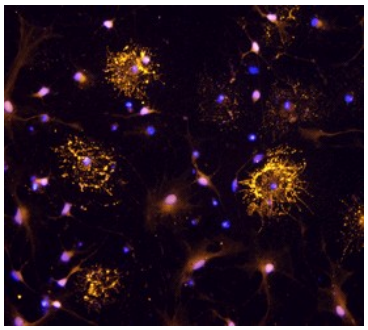
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Immunocytochemistry	8-25 µg/mL	See Below

DATA

Immunocytochemistry



PLP in Rat Cortical Stem Cells. PLP was detected in immersion fixed 7 day differentiated rat cortical stem cells using Human PLP Monoclonal Antibody (Catalog # MAB6310) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (yellow; Catalog # NL007) and counterstained with DAPI. Specific staining was localized to oligodendrocytes. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Proteolipid protein (PLP; also lipophilin) is an abundant, 277 amino acid, 24-25 kDa integral membrane molecule that is specific to CNS myelin. It is a four transmembrane domain protein that contributes to the multilaminar structure of myelin. Structurally, both the N- and C-termini are cytoplasmic, and the molecule likely forms oligomers on the cell surface. Mutations in the gene for PLP are associated with CNS dysmyelination and abnormal oligodendrocyte death in mice, and Pelizaeus-Merzbacher disease in human. It is proposed that PLP point mutations result in improper protein folding with subsequent intracellular retention. A mouse monoclonal antibody termed O10 has been developed that is directed against a novel cell surface epitope of PLP. O10 belongs to the IgM subclass, and marks a cell-specific, denaturation-sensitive epitope that appears late in the oligodendrocyte differentiation. This epitope does not appear to be a carbohydrate, but instead a peptide segment that appears after proper molecule folding. The O10 antibody does not recognize mutated PLP, and thus may serve as an assay for the presence of functional PLP. PLP demonstrates one splice form of 20 kDa that shows a deletion of aa 117-151 (in both human and mouse). This isoform, termed DM20, is recognized by O10.