Anti-Myelin PLP Antibody

HA500202

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IF-Cell, IHC-P
Molecular Wt:	Predicted Molecular Wt. 30 kDa

Description: Proteolipid protein 1 (PLP1) is a form of myelin proteolipid protein (PLP). Mutations in PLP1 are associated with Pelizaeus–Merzbacher disease. It is a 4 transmembrane domain protein which is proposed to bind other copies of itself on the extracellular side of the membrane. In a myelin sheath, as the layers of myelin wraps come together, PLP will bind itself and tightly hold the cellular membranes together. This gene encodes a transmembrane proteolipid protein that is the predominant myelin protein present in the central nervous system (CNS). The encoded protein functions in myelination. This protein may play a role in the compaction, stabilization, and maintenance of myelin sheaths, as well as in oligodendrocyte development and axonal survival. Mutations associated with this gene cause X-linked Pelizaeus–Merzbacher disease and spastic paraplegia type 2. Two transcript variants encoding distinct isoforms have been identified for this gene. In melanocytic cells PLP1 gene expression may be regulated by MITF.

Immunogen: Synthetic peptide within huamn PLP1 aa 37-63 (Extracellular domain).

Positive control: HepG2 cell lysate, mouse cerebellum tissue lysate, mouse brain tissue lysate, rat brain tissue lysate, F9 cell, rat brain tissue, mouse brain tissue.

Subcellular location: Cell membrane, Myelin membrane.

Database links: SwissProt: P60201 Human | P60202 Mouse | P60203 Rat

Recommended Dilutions:

WB	1:500-1:2,000
IF-Cell	1:50-1:100
IHC-P	1:50-1:200

Storage Buffer: 1*TBS (pH7.4), 0.2% BSA, 50% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Immunogen affinity purified.

Images

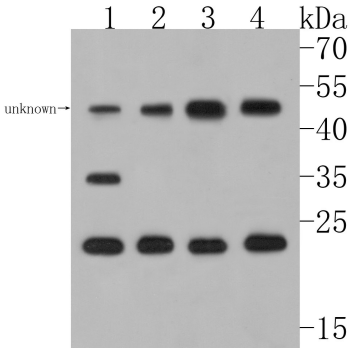

Fig1: Western blot analysis of Myelin PLP on different lysates. Proteins were transferred to a PVDF membrane and blocked with 5% BSA in PBS for 1 hour at room temperature. The primary antibody (HA500202, 1/500) was used in 5% BSA at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:5,000 dilution was used for 1 hour at room temperature.

Positive control:

Lane 1: HepG2 cell lysate

Lane 2: Mouse cerebellum tissue lysate

Lane 3: Mouse brain tissue lysate

Lane 4: Rat brain tissue lysate

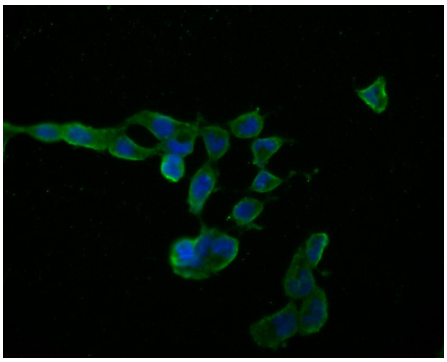

Fig2: ICC staining of Myelin PLP in F9 cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with the primary antibody (HA500202, 1/50) for 1 hour at room temperature, washed with PBS. Alexa Fluor®488 Goat anti-Rabbit IgG was used as the secondary antibody at 1/1,000 dilution. The nuclear counter stain is DAPI (blue).

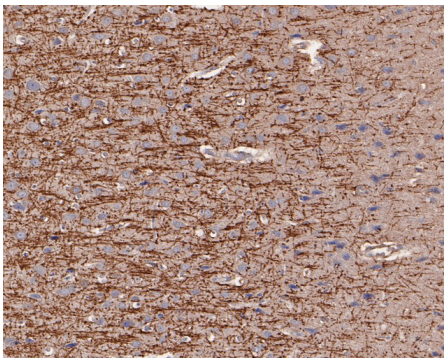

Fig3: Immunohistochemical analysis of paraffin-embedded rat brain tissue using anti-Myelin PLP antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA500202, 1/400) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

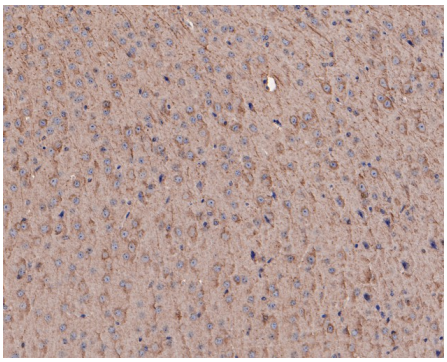

Fig4: Immunohistochemical analysis of paraffin-embedded mouse brain tissue using anti-Myelin PLP antibody. The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 8.0-8.4) for 20 minutes.The tissues were blocked in 5% BSA for 30 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA500202, 1/100) for 30 minutes at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Wight PA. Effects of Intron 1 Sequences on Human PLP1 Expression: Implications for PLP1-Related Disorders. ASN Neuro. 2017 Jul-Aug
2. Cloake NC. et. al. PLP1 Mutations in Patients with Multiple Sclerosis: Identification of a New Mutation and Potential Pathogenicity of the Mutations. J Clin Med. 2018 Oct