Anti-MAG Antibody [PSH02-41]

HA721818

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat, Cynomolgus monkey, Pig
Applications:	WB, IHC-P, IF-Tissue, IP, IHC-Fr
Molecular Wt:	Predicted band size: 69 kDa
Clone number:	PSH02-41

Description:	Adhesion molecule that mediates interactions between myelinating cells and neurons by binding to neuronal sialic acid-containing gangliosides and to the glycoproteins RTN4R and RTN4RL2 (By similarity). Not required for initial myelination, but seems to play a role in the maintenance of normal axon myelination. Protects motoneurons against apoptosis, also after injury; protection against apoptosis is probably mediated via interaction with neuronal RTN4R and RTN4RL2. Required to prevent degeneration of myelinated axons in adults; this probably depends on binding to gangliosides on the axon cell membrane (By similarity). Negative regulator of neurite outgrowth; in dorsal root ganglion neurons the inhibition is mediated primarily via binding to neuronal RTN4R or RTN4RL2 and to a lesser degree via binding to neuronal gangliosides. In cerebellar granule cells the inhibition is mediated primarily via binding to neuronal gangliosides. In sensory neurons, inhibition of neurite extension depends only partially on RTN4R, RTN4RL2 and gangliosides. Inhibits axon longitudinal growth (By similarity). Inhibits axon outgrowth by binding to RTN4R (By similarity). Preferentially binds to alpha-2,3-linked sialic acid. Binds ganglioside Gt1b (By similarity).
Immunogen:	Recombinant protein within human MAG aa 1-536 / 626.
Positive control:	Mouse brain(no heat) tissue lysate, mouse cerebellum tissue lysate, rat brain(no heat) tissue lysate, rat cerebellum tissue lysate, human brain tissue, human cerebellum tissue, mouse brain tissue, mouse cerebellum tissue, mouse hippocampus tissue, rat brain tissue, rat cerebellum tissue, rat hippocampus tissue.
Subcellular location:	Cell membrane, Membrane raft.
Database links:	SwissProt: P20916 Human | P20917 Mouse | P07722 Rat
Recommended Dilutions:	
WB	1:2,000
IHC-P	1:2,000-1:5,000
IF-Tissue	1:200-1:1,000
IP	1-2μg/sample
IHC-Fr	1:500-1:1,000
Storage Buffer:	PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.
Storage Instruction:	Shipped at 4℃. Store at +4℃ short term (1-2 weeks). Store at -20℃ long term.
Purity:	Protein A affinity purified.

Images

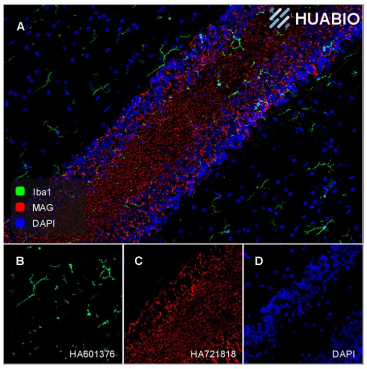

Fig1: Application: IHC-Fr

Species: Mouse

Site: Cerebral cortex

Sample: Frozen section

Antibody concentration: 1: 500 (MAG, HA721818, red); 1:500 (Iba1, HA601376, green)

Antigen retrieval: Not required

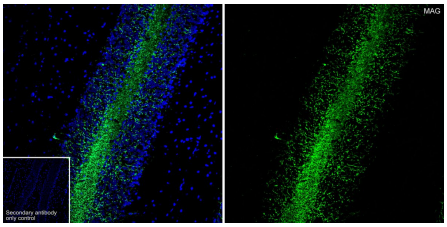

Fig2: Application: IHC-Fr

Species: Mouse

Site: Cerebellum

Sample: Frozen section

Antibody concentration: 1:500

Antigen retrieval: Not required

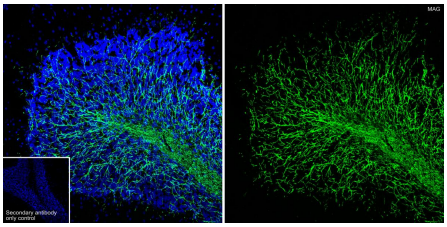

Fig3: Application: IHC-Fr

Species: Mouse

Site: Cerebellum

Sample: Frozen section

Antibody concentration: 1:500

Antigen retrieval: The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for about 2 minutes in microwave oven.

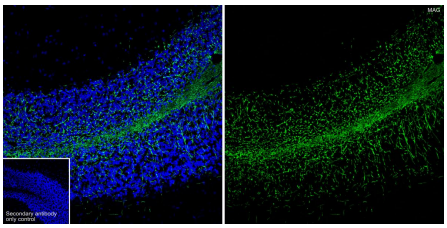

Fig4: Application: IHC-Fr

Species: Rat

Site: Cerebellum

Sample: Frozen section

Antibody concentration: 1:500

Antigen retrieval: The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for about 2 minutes in microwave oven.

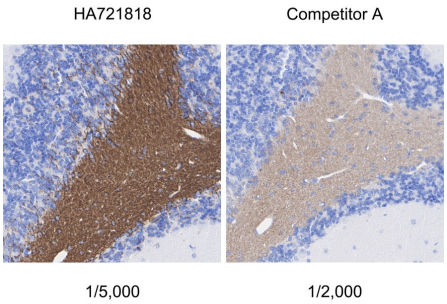

Fig5: Immunohistochemical analysis of paraffin-embedded mouse cerebellum tissue with Rabbit anti-MAG antibody (HA721818) at 1/5,000 dilution and competitor's antibody at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/5,000 dilution and competitor's antibody at 1/2,000 dilution for 1 hour 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.

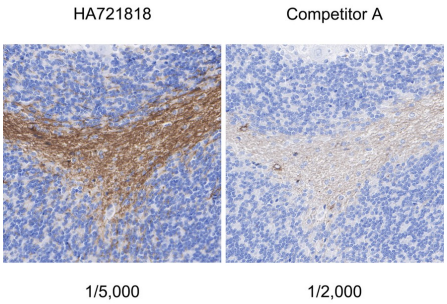

Fig6: Immunohistochemical analysis of paraffin-embedded rat cerebellum tissue with Rabbit anti-MAG antibody (HA721818) at 1/5,000 dilution and competitor's antibody at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/5,000 dilution and competitor's antibody at 1/2,000 dilution for 1 hour 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.

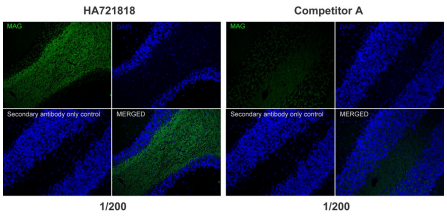

Fig7: Application: IF-tissue

Species: Mouse

Site: Cerebellum

Sample: Paraffin-embedded section

Antibody concentration: 1:200

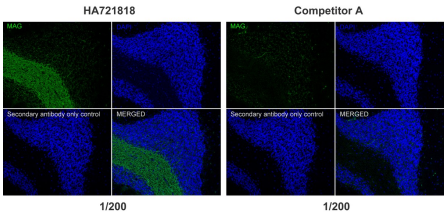

Fig8: Application: IF-tissue

Species: Rat

Site: Cerebellum

Sample: Paraffin-embedded section

Antibody concentration: 1:200

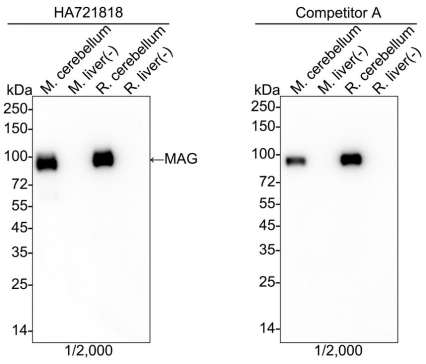

Fig9: Western blot analysis of MAG on different lysates with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution and competitor's antibody at 1/2,000 dilution.

Lane 1: Mouse cerebellum tissue lysate (20 µg/Lane)
Lane 2: Mouse liver tissue lysate (negative) (20 µg/Lane)
Lane 3: Rat cerebellum tissue lysate (20 µg/Lane)
Lane 4: Rat liver tissue lysate (negative) (20 µg/Lane)

Predicted band size: 69 kDa
Observed band size: 100 kDa
Exposure time: 2 minutes; ECL: K1801;
4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA721818) at 1/2,000 dilution and competitor's antibody at 1/2,000 dilution were used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

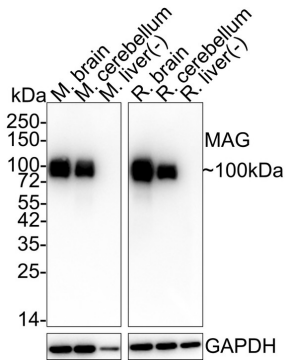

Fig10: Western blot analysis of MAG on different lysates with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

Lane 1: Mouse brain tissue lysate (no heat) (20 µg/Lane)
Lane 2: Mouse cerebellum tissue lysate (20 µg/Lane)
Lane 3: Mouse liver tissue lysate (negative) (20 µg/Lane)
Lane 4: Rat brain tissue lysate (no heat) (20 µg/Lane)
Lane 5: Rat cerebellum tissue lysate (20 µg/Lane)
Lane 6: Rat liver tissue lysate (negative) (20 µg/Lane)

Notice: no heat means the lysate is not boiled.

Predicted band size: 69 kDa
Observed band size: 100 kDa
Exposure time: 42 seconds; ECL: K1802;
4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA721818) at 1/2,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

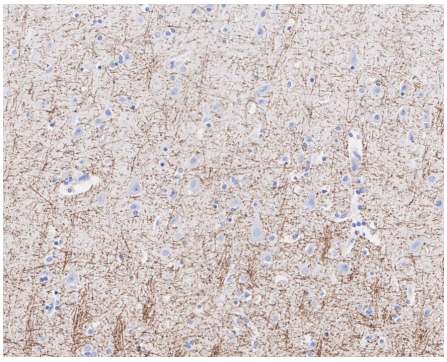

Fig11: Immunohistochemical analysis of paraffin-embedded human brain tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

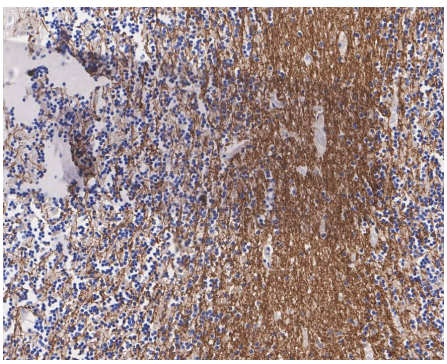

Fig12: Immunohistochemical analysis of paraffin-embedded human cerebellum tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

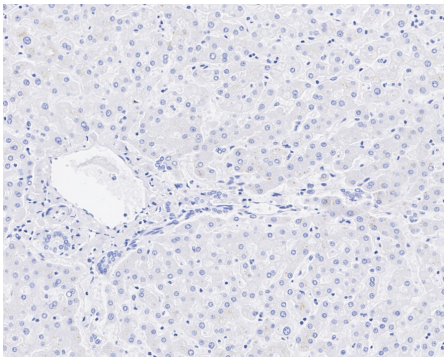

Fig13: Immunohistochemical analysis of paraffin-embedded human liver (negative) tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

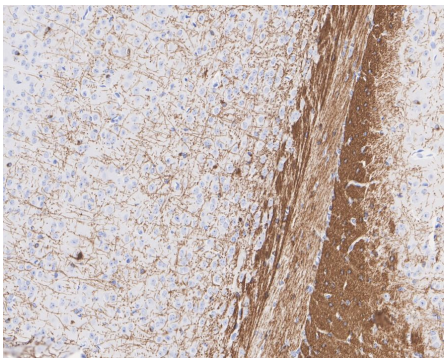

Fig14: Immunohistochemical analysis of paraffin-embedded mouse brain tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

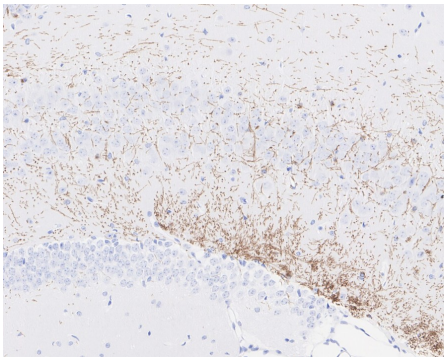

Fig15: Immunohistochemical analysis of paraffin-embedded mouse hippocampus tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

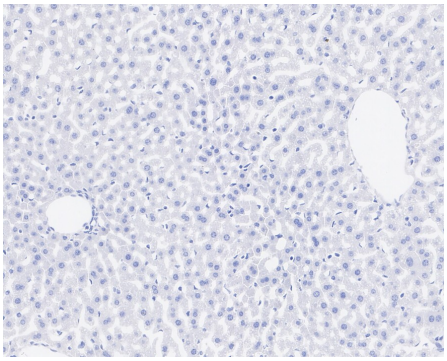

Fig16: Immunohistochemical analysis of paraffin-embedded mouse liver (negative) tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

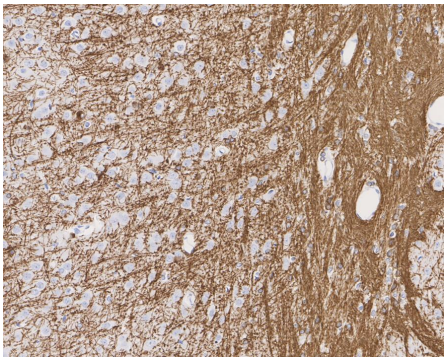

Fig17: Immunohistochemical analysis of paraffin-embedded rat brain tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

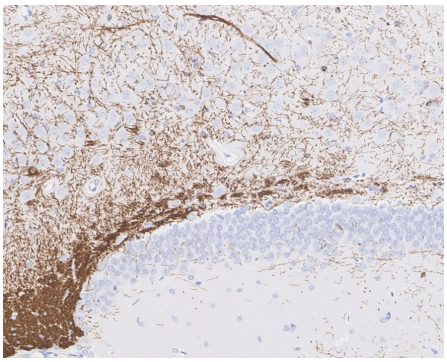

Fig18: Immunohistochemical analysis of paraffin-embedded rat hippocampus tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

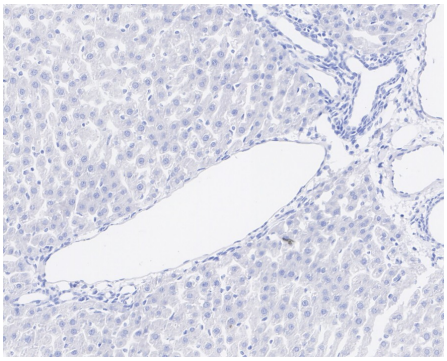

Fig19: Immunohistochemical analysis of paraffin-embedded rat liver (negative) tissue with Rabbit anti-MAG antibody (HA721818) at 1/2,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA721818) at 1/2,000 dilution for 1 hour 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.

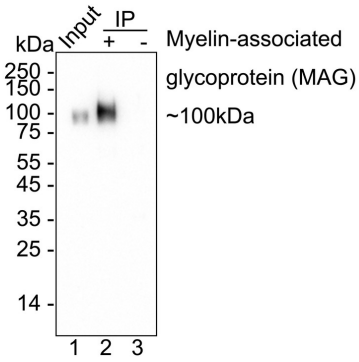

Fig20: MAG was immunoprecipitated from 0.2 mg mouse brain tissue lysate with HA721818 at 2 µg/10 µl beads. Western blot was performed from the immunoprecipitate using HA721818 at 1/1,000 dilution. Anti-Rabbit IgG for IP, AlpSdAbs® VHH(HRP) (025-100-005) at 1/5,000 dilution was used for 1 hour at room temperature.

Lane 1: Mouse brain tissue lysate (input)
Lane 2: HA721818 IP in mouse brain tissue lysate
Lane 3: Rabbit IgG instead of HA721818 in mouse brain tissue lysate

Blocking/Dilution buffer: 5% NFDM/TBST
Exposure time: 32 seconds; ECL: K1801

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

Background References

1. Latov N et al. Anti-MAG neuropathy: historical aspects, clinical-pathological correlations, and considerations for future therapeutical trials. Arq Neuropsiquiatr. 2024 Jun
2. Steck AJ. Anti-MAG neuropathy: From biology to clinical management. J Neuroimmunol. 2021 Dec