Anti-ZPR1 Antibody [JE58-88]

HA720026

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IF-Cell, FC
Molecular Wt:	Predicted band size: 51 kDa
Clone number:	JE58-88

Description: The protein encoded by this gene is found in the cytoplasm of quiescent cells but translocates to the nucleolus in proliferating cells. The encoded protein interacts with survival motor neuron protein (SMN1) to enhance pre-mRNA splicing and to induce neuronal differentiation and axonal growth. Defects in this gene or the SMN1 gene can cause spinal muscular atrophy. Two transcript variants encoding different isoforms have been found for this gene. Acts as a signaling molecule that communicates proliferative growth signals from the cytoplasm to the nucleus. Plays a role for the localization and accumulation of the survival motor neuron protein SMN1 in sub-nuclear bodies, including gems and Cajal bodies. Induces neuron differentiation and stimulates axonal growth and formation of growth cone in spinal cord motor neurons. Plays a role in the splicing of cellular pre-mRNAs. May be involved in H2O2-induced neuronal cell death.

Immunogen: Recombinant protein within human ZPR1 aa 360-459/459.

Positive control: HCT 116 cell lysate, HepG2 cell lysate, MDA-MB-231 cell lysate, Jurkat cell lysate, NIH/3T3 cell lysate, MEF cell lysate, PC-12 cell lysate, PC-12, human testis tissue, mouse testis tissue, rat testis tissue, HCT 116, NIH/3T3.

Subcellular location: Nucleus, nucleolus, gem, Cajal body, perinuclear region, Cytoplasm, axon, growth cone.

Database links: SwissProt: O75312 Human | Q62384 Mouse
Entrez Gene: 500989 Rat

Recommended Dilutions:

WB	1:5,000
IHC-P	1:50-1:200
IF-Cell	1:100
FC	1:1,000

Storage Buffer: 1*TBS (pH7.4), 0.05% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

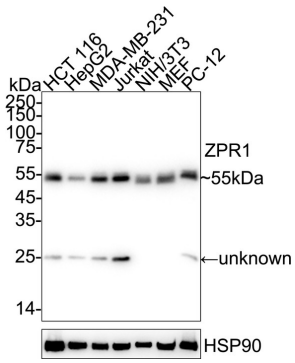

Fig1: Western blot analysis of ZPR1 on different lysates with Rabbit anti-ZPR1 antibody (HA720026) at 1/5,000 dilution.

Lane 1: HCT 116 cell lysate
Lane 2: HepG2 cell lysate
Lane 3: MDA-MB-231 cell lysate
Lane 4: Jurkat cell lysate
Lane 5: NIH/3T3 cell lysate
Lane 6: MEF cell lysate
Lane 7: PC-12 cell lysate

Lysates/proteins at 20 µg/Lane.

Predicted band size: 51 kDa
Observed band size: 55 kDa

Exposure time: 8 seconds; 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 (HA720026) at 1/5,000 dilution was used in primary antibody dilution (K1803) at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

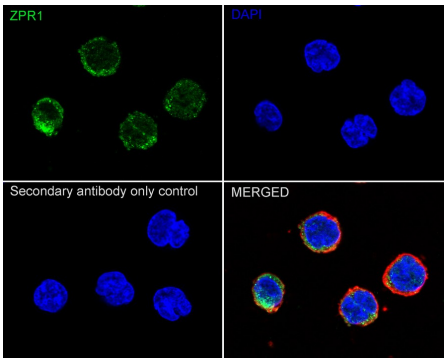

Fig2: Immunocytochemistry analysis of PC-12 cells labeling ZPR1 with Rabbit anti-ZPR1 antibody (HA720026) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 15 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 15 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Rabbit anti-ZPR1 antibody (HA720026) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

Beta tubulin (HA601187, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Mouse IgG H&L (iFluor™ 594, HA1126) was used as the secondary antibody at 1/1,000 dilution.

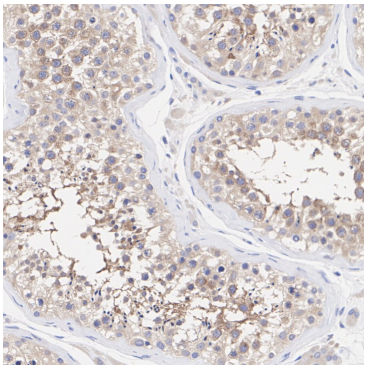

Fig3: Immunohistochemical analysis of paraffin-embedded human testis tissue with Rabbit anti-ZPR1 antibody (HA720026) at 1/1,000 dilution.

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 (HA720026) at 1/1,000 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.

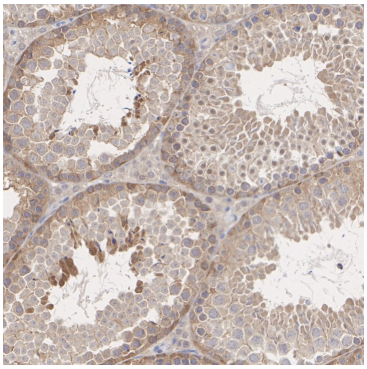

Fig4: Immunohistochemical analysis of paraffin-embedded mouse testis tissue with Rabbit anti-ZPR1 antibody (HA720026) at 1/1,000 dilution.

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 (HA720026) at 1/1,000 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.

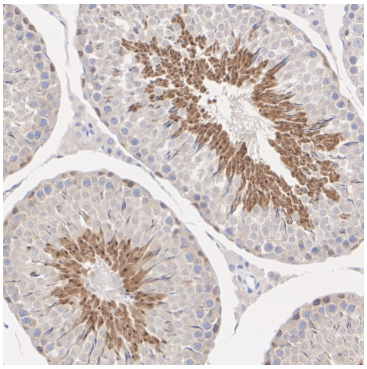

Fig5: Immunohistochemical analysis of paraffin-embedded rat testis tissue with Rabbit anti-ZPR1 antibody (HA720026) at 1/1,000 dilution.

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 (HA720026) at 1/1,000 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.

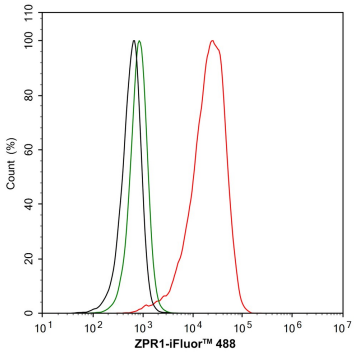

Fig6: Flow cytometric analysis of HCT 116 cells labeling ZPR1.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA720026, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

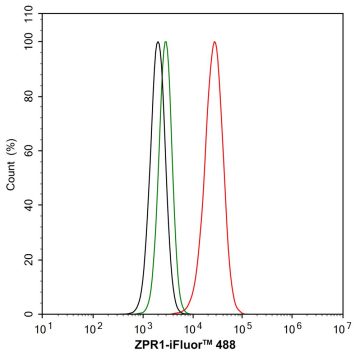

Fig7: Flow cytometric analysis of NIH/3T3 cells labeling ZPR1.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA720026, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

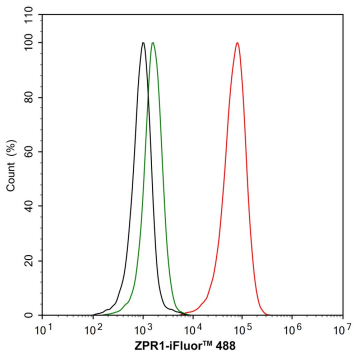

Fig8: Flow cytometric analysis of PC-12 cells labeling ZPR1.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA720026, 1/1,000) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Background References

1. Kannan A. et. al. ZPR1 prevents R-loop accumulation, upregulates SMN2 expression and rescues spinal muscular atrophy. Brain. 2020 Jan
2. Jiang X. et. al. ZPR1-Dependent Neurodegeneration Is Mediated by the JNK Signaling Pathway. J Exp Neurosci. 2019 Aug