Anti-Transferrin Receptor (CD71) Antibody [PSH13-56]

HA723545

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IF-Cell, IHC-P, FC, IP, IF-Tissue
Molecular Wt:	Predicted band size: 85 kDa
Clone number:	PSH13-56

Description: CD71, also known as the transferrin receptor (TFR), is a type II membrane glycoprotein that exists as a disulfide-linked homodimer of two identical subunits. CD71 binds to two molecules of transferrin and a serum iron-transport protein, and directs the cellular uptake of iron via receptor-mediated endocytosis. CD71 is expressed, typically at high levels, on all proliferating cells, reticulocytes and erythroid precursors. It is not expressed on resting leukocytes, but is upregulated upon activation of lymphocytes, monocytes and macrophages. CD71 is also found on most dividing cells and on brain endothelium. A second transferrin receptor, TFR2, also mediates the uptake of transferrin-bound iron. TFR2 is a two-subunit homodimer and is highly expressed in liver as well as in hepatocytes and erythroid precursors. Mutations in the TFR2 gene result in hereditary hemochromatosis type III (HFE3), an iron overloading disorder predominant in Caucasians.

Immunogen: Recombinant protein within human CD71 aa 89-760.

Positive control: K-562 cell lysate, Jurkat cell lysate, HeLa cell lysate, 293T cell lysate, K-562, human bone marrow tissue, human placenta tissue, mouse bone marrow tissue, rat bone marrow tissue.

Subcellular location: Cell membrane, Melanosome; Secreted.

Database links: SwissProt: P02786 Human | Q62351 Mouse | Q99376 Rat

Recommended Dilutions:

WB	1:5,000
IF-Cell	1:250
IHC-P	1:10,000
FC	1:1,000
IP	1-2μg/sample
IF-Tissue	1:1,000-1:2,000

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). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

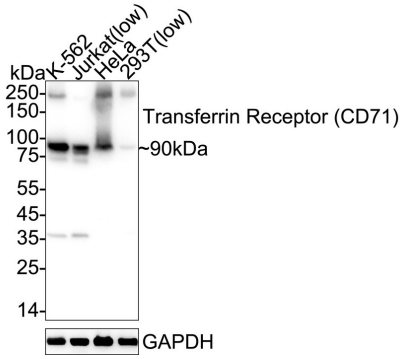

Fig1: Western blot analysis of Transferrin Receptor (CD71) on different lysates with Rabbit anti-Transferrin Receptor (CD71) antibody (HA723545) at 1/5,000 dilution.

Lane 1: K-562 cell lysate
Lane 2: Jurkat cell lysate (low expression)
Lane 3: HeLa cell lysate
Lane 4: 293T cell lysate (low expression)

Lysates/proteins at 20 µg/Lane.

Predicted band size: 85 kDa
Observed band size: 90 kDa

Exposure time: 14 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 (HA723545) 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.

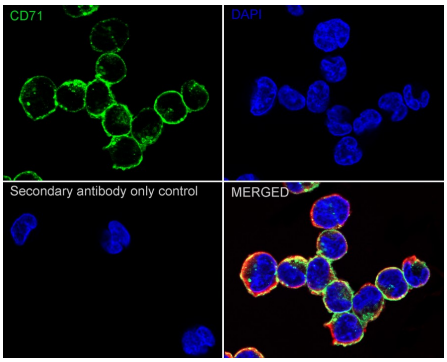

Fig2: Immunocytochemistry analysis of K-562 cells labeling Transferrin Receptor (CD71) with Rabbit anti-Transferrin Receptor (CD71) antibody (HA723545) at 1/250 dilution.

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-Transferrin Receptor (CD71) antibody (HA723545) at 1/250 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.

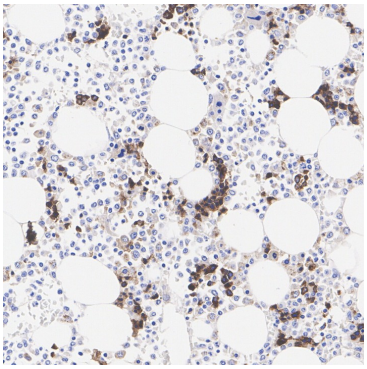

Fig3: Immunohistochemical analysis of paraffin-embedded human bone marrow tissue with Rabbit anti-Transferrin Receptor (CD71) antibody (HA723545) at 1/10,000 dilution.

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 (HA723545) at 1/10,000 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.

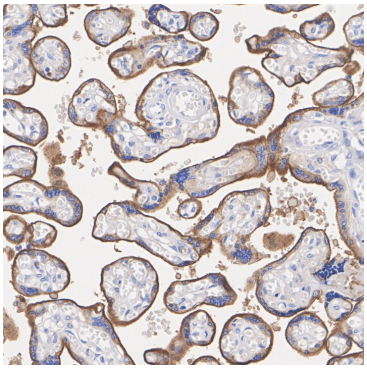

Fig4: Immunohistochemical analysis of paraffin-embedded human placenta tissue with Rabbit anti-Transferrin Receptor (CD71) antibody (HA723545) at 1/10,000 dilution.

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 (HA723545) at 1/10,000 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.

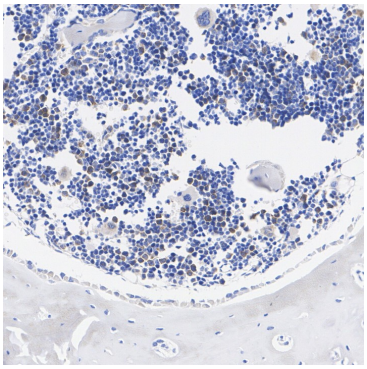

Fig5: Immunohistochemical analysis of paraffin-embedded mouse bone marrow tissue with Rabbit anti-Transferrin Receptor (CD71) antibody (HA723545) at 1/10,000 dilution.

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 (HA723545) at 1/10,000 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.

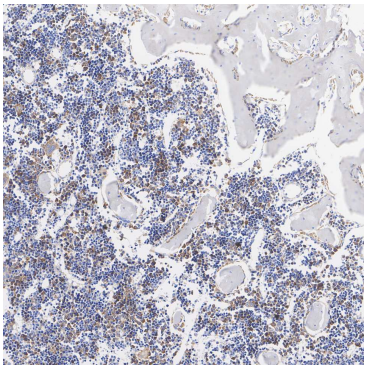

Fig6: Immunohistochemical analysis of paraffin-embedded rat bone marrow tissue with Rabbit anti-Transferrin Receptor (CD71) antibody (HA723545) at 1/10,000 dilution.

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 (HA723545) at 1/10,000 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.

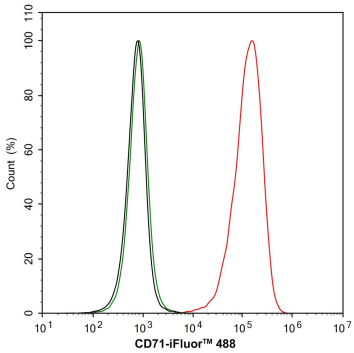

Fig7: Flow cytometric analysis of K-562 cells labeling Transferrin Receptor (CD71).

Cells were washed twice with cold PBS and resuspend. Then stained with the primary antibody (HA723545, 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).

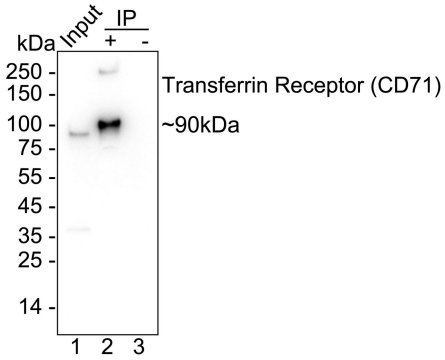

Fig8: Transferrin Receptor (CD71) was immunoprecipitated from 0.2 mg K-562 cell lysate with HA723545 at 2 µg/10 µl beads. Western blot was performed from the immunoprecipitate using HA723545 at 1/5,000 dilution. HRP Conjugated Anti-Rabbit IgG for IP Nano-secondary antibody at 1/5,000 dilution was used for 1 hour at room temperature.

Lane 1: K-562 cell lysate (input)
Lane 2: HA723545 IP in K-562 cell lysate
Lane 3: Rabbit IgG instead of HA723545 in K-562 cell lysate

Blocking/Dilution buffer: 5% NFDM/TBST
Exposure time: 2 seconds; ECL: K1801

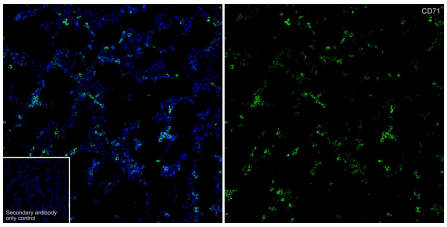

Fig9: Application: IF-Tissue

Species: Human

Site: bone marrow

Sample: Paraffin-embedded section

Antibody concentration: 1/1,000

Background References

1. Xiong L et al. Nutrition impact on ILC3 maintenance and function centers on a cell-intrinsic CD71-iron axis. Nat Immunol. 2023 Oct;
2. Chiappelli F. CD71: Role in permafrost immunity. Bioinformation. 2024 Mar