Anti-PSMA7 / HSPC Antibody

HA500004

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat, Monkey
Applications:	WB, IHC-P, IF-Cell, FC
Molecular Wt:	Predicted band size: 28 kDa

Description: Proteasome subunit alpha type-7 also known as 20S proteasome subunit alpha-4 is a protein that in humans is encoded by the PSMA7 gene. This protein is one of the 17 essential subunits (alpha subunits 1–7, constitutive beta subunits 1–7, and inducible subunits including beta1i, beta2i, beta5i) that contributes to the complete assembly of 20S proteasome complex. The eukaryotic proteasome recognized degradable proteins, including damaged proteins for protein quality control purpose or key regulatory protein components for dynamic biological processes. An essential function of a modified proteasome, the immunoproteasome, is the processing of class I MHC peptides. As a component of alpha ring, proteasome subunit alpha type-7 contributes to the formation of heptameric alpha rings and substrate entrance gate. Importantly, this subunit plays a critical role in the assembly of 19S base and 20S. This particular subunit has been shown to interact specifically with the hepatitis B virus X protein, a protein critical to viral replication. In addition, this subunit is involved in regulating hepatitis virus C internal ribosome entry site (IRES) activity, an activity essential for viral replication. This core alpha subunit is also involved in regulating the hypoxia-inducible factor-1alpha, a transcription factor important for cellular responses to oxygen tension.

Immunogen:	Recombinant protein within human PSMA7 aa 50-248.
Positive control:	A549 cell lysate, HepG2 cell lysate, HeLa cell lysate, COS-1 cell lysate, 4T1 cell lysate, Neuro-2a cell lysate, PC-12 cell lysate, HeLa, NIH/3T3, human liver carcinoma tissue, human pancreas tissue, mouse pancreas tissue, rat pancreas tissue.
Subcellular location:	Cytoplasm, Nucleus.
Database links:	SwissProt: O14818 Human | Q9Z2U0 Mouse | P48004 Rat
Recommended Dilutions:	
WB	1:50,000
IHC-P	1:1,000
IF-Cell	1:100
FC	1:500-1:1,000
Storage Buffer:	1*TBS (pH7.4), 0.2% BSA, 50% 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:	Immunogen affinity purified.

Images

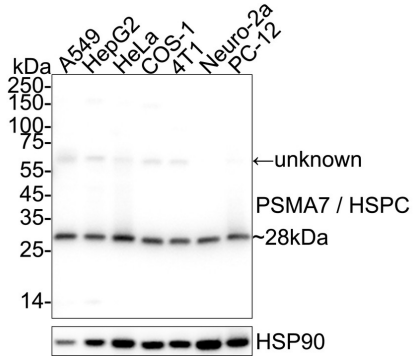

Fig1: Western blot analysis of PSMA7 / HSPC on different lysates with Rabbit anti-PSMA7 / HSPC antibody (HA500004) at 1/50,000 dilution.

Lane 1: A549 cell lysate
Lane 2: HepG2 cell lysate
Lane 3: HeLa cell lysate
Lane 4: COS-1 cell lysate
Lane 5: 4T1 cell lysate
Lane 6: Neuro-2a cell lysate
Lane 7: PC-12 cell lysate

Lysates/proteins at 20 µg/Lane.

Predicted band size: 28 kDa
Observed band size: 28 kDa

Exposure time: 4 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 (HA500004) at 1/50,000 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.

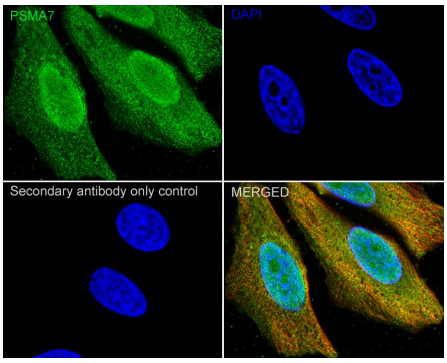

Fig2: Immunocytochemistry analysis of HeLa cells labeling PSMA7 / HSPC with Rabbit anti-PSMA7 / HSPC antibody (HA500004) at 1/100 dilution.

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-PSMA7 / HSPC antibody (HA500004) 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.

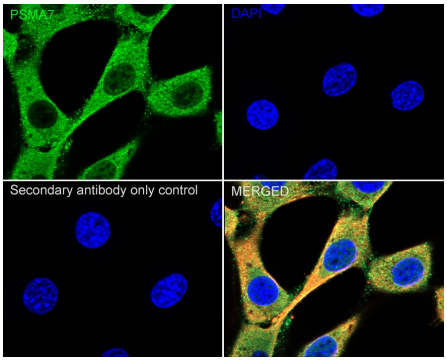

Fig3: Immunocytochemistry analysis of NIH/3T3 cells labeling PSMA7 / HSPC with Rabbit anti-PSMA7 / HSPC antibody (HA500004) at 1/100 dilution.

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-PSMA7 / HSPC antibody (HA500004) 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.

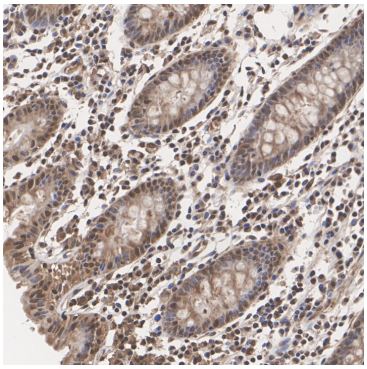

Fig4: Immunohistochemical analysis of paraffin-embedded human colon tissue with Rabbit anti-PSMA7 / HSPC antibody (HA500004) at 1/1,000 dilution.

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 (HA500004) 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.

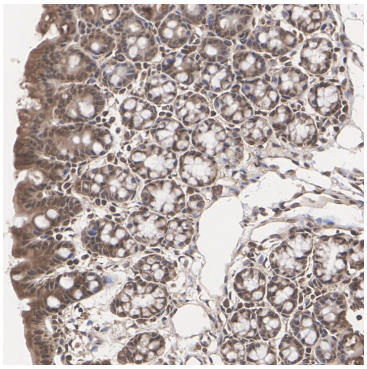

Fig5: Immunohistochemical analysis of paraffin-embedded mouse colon tissue with Rabbit anti-PSMA7 / HSPC antibody (HA500004) at 1/1,000 dilution.

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 (HA500004) 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.

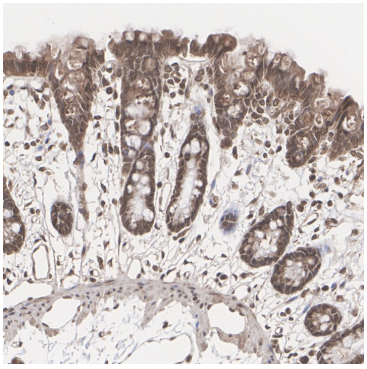

Fig6: Immunohistochemical analysis of paraffin-embedded rat colon tissue with Rabbit anti-PSMA7 / HSPC antibody (HA500004) at 1/1,000 dilution.

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 (HA500004) 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.

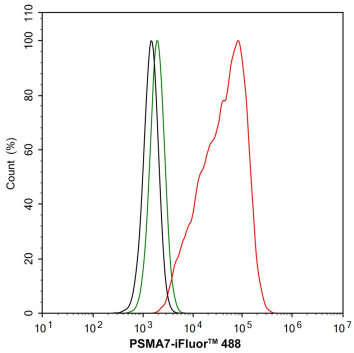

Fig7: Flow cytometric analysis of HeLa cells labeling PSMA7 / HSPC.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA500004, 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).

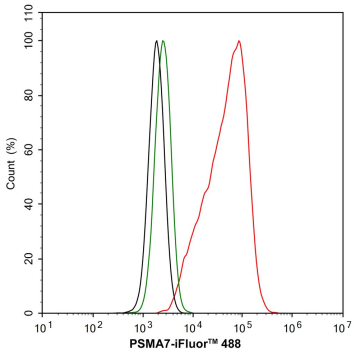

Fig8: Flow cytometric analysis of NIH/3T3 cells labeling PSMA7 / HSPC.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA500004, 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. Jiao QH et al. PSMA7 promotes the malignant proliferation of esophageal cancer. Heliyon. 2023 Dec
2. Sheng G et al. Pan-caner analysis identifies PSMA7 as a targets for amplification at 20q13.33 in tumorigenesis. Sci Rep. 2024 Feb