Anti-TMPRSS2 Antibody [A6D9]

HA600057

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IF-Cell
Molecular Wt:	Predicted band size: 54 kDa
Clone number:	A6D9

Description: Transmembrane protease, serine 2 is an enzyme that in humans is encoded by the TMPRSS2 gene. This gene encodes a protein that belongs to the serine protease family. The encoded protein contains a type II transmembrane domain, a receptor class A domain, a scavenger receptor cysteine-rich domain and a protease domain. Serine proteases are known to be involved in many physiological and pathological processes. This gene was demonstrated to be up-regulated by androgenic hormones in prostate cancer cells and down-regulated in androgen-independent prostate cancer tissue. The protease domain of this protein is thought to be cleaved and secreted into cell media after autocleavage. The biological function of this gene is unknown. TMPRSS2 protein's function in prostate carcinogenesis relies on overexpression of ETS transcription factors, such as ERG and ETV1, through gene fusion. TMPRSS2-ERG fusion gene is the most frequent, present in 40% - 80% of prostate cancers in humans. ERG overexpression contributes to development of androgen-independence in prostate cancer through disruption of androgen receptor signaling. Some coronaviruses, e.g. SARS-CoV-1, MERS-CoV, and SARS-CoV-2 are activated by TMPRSS2 and can thus be inhibited by TMPRSS2 inhibitors. SARS-CoV-2 uses the SARS-CoV receptor ACE2 for entry and the serine protease TMPRSS2 for S protein priming. A TMPRSS2 inhibitor approved for clinical use blocked entry and might constitute a treatment option.

Immunogen: Synthetic peptide within human TMPRSS2 aa 1-50.

Positive control: Mouse pancreas tissue lysate, mouse kidney tissue lysate, rat pancreas tissue lysate, rat kidney tissue lysate, HeLa, Hela cell lysates.

Subcellular location: Cell membrane; Secreted.

Database links: SwissProt: O15393 Human | Q9JIQ8 Mouse
Entrez Gene: 156435 Rat

Recommended Dilutions:

WB	1:500-1:1,000
IF-Cell	1:100

Storage Buffer: PBS (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 G affinity purified.

Images

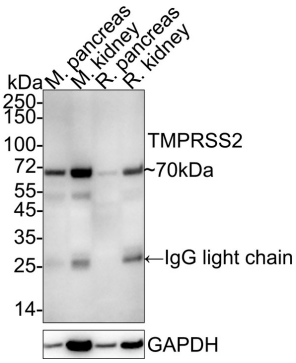

Fig1: Western blot analysis of TMPRSS2 on different lysates with Mouse anti-TMPRSS2 antibody (HA600057) at 1/1,000 dilution.

Lane 1: Mouse pancreas tissue lysate
Lane 2: Mouse kidney tissue lysate
Lane 3: Rat pancreas tissue lysate
Lane 4: Rat kidney tissue lysate

Lysates/proteins at 40 µg/Lane.

Predicted band size: 54 kDa
Observed band size: 70 kDa

Exposure time: 30 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 (HA600057) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

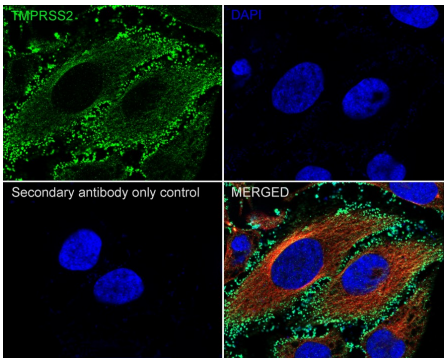

Fig2: Immunocytochemistry analysis of HeLa cells labeling TMPRSS2 with Mouse anti-TMPRSS2 antibody (HA600057) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 20 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 5 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 Mouse anti-TMPRSS2 antibody (HA600057) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) 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 (ET1602-4, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Rabbit IgG H&L (iFluor™ 594, HA1122) were used as the secondary antibody at 1/1,000 dilution.

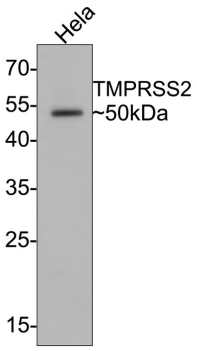

Fig3: Western blot analysis of TMPRSS2 on Hela cell lysates with Mouse anti-TMPRSS2 antibody (HA600057) at 1/500 dilution.

Lysates/proteins at 10 µg/Lane.

Predicted band size: 54 kDa
Observed band size: 50 kDa

Exposure time: 1 minute;

12% 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 (HA600057) at 1/500 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1:20,000 dilution was used for 1 hour at room temperature.

Background References

1. Zipeto D. et. al. ACE2/ADAM17/TMPRSS2 Interplay May Be the Main Risk Factor for COVID-19. Front Immunol. 2020 Oct
2. Dong M. et. al. ACE2, TMPRSS2 distribution and extrapulmonary organ injury in patients with COVID-19. Biomed Pharmacother. 2020 Nov