10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TMPRSS2 (IN) Antibody

Infectious Disease, COVID-19
Catalog # ASC12207

Product Information

Application	WB, IF, E
Primary Accession	O15393
Other Accession	O15393
Reactivity	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Clone Names	TMPRSS2
Calculated MW	53859
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	WB: 2 µg/mL; IF: 20 µg/mL. Antibody validated: Western Blot in human, mouse and rat samples; Immunofluorescence in human, mouse and rat samples. All other applications and species not yet tested.

Additional Information

Gene ID	7113
Alias Symbol	TMPRSS2
Other Names	TMPRSS2 Antibody: Transmembrane protease serine 2, Serine protease 10, PRSS10, Transmembrane protease serine 2 non-catalytic chain, Transmembrane protease serine 2 catalytic chain.
Reconstitution & Storage	TMPRSS2 antibody can be stored at 4˚C for three months and -20˚C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	TMPRSS2 (IN) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	TMPRSS2 (HGNC:11876)
Synonyms	PRSS10
Function	Plasma membrane-anchored serine protease that cleaves at arginine residues (PubMed:32703818, PubMed:35676539, PubMed:37990007, PubMed:38964328). Participates in proteolytic cascades of relevance for the

	normal physiologic function of the prostate (PubMed:25122198). Androgen-induced TMPRSS2 activates several substrates that include pro-hepatocyte growth factor/HGF, the protease activated receptor-2/F2RL1 or matriptase/ST14 leading to extracellular matrix disruption and metastasis of prostate cancer cells (PubMed:15537383, PubMed:25122198, PubMed:26018085). In addition, activates trigeminal neurons and contribute to both spontaneous pain and mechanical allodynia (By similarity).
Cellular Location	Cell membrane; Single-pass type II membrane protein
Tissue Location	Expressed in several tissues that comprise large populations of epithelial cells with the highest level of transcripts measured in the prostate gland. Expressed in type II pneumocytes in the lung (at protein level). Expressed strongly in small intestine. Also expressed in colon, stomach and salivary gland. Coexpressed with ACE2 within lung type II pneumocytes, ileal absorptive enterocytes, intestinal epithelial cells, cornea, gallbladder and nasal goblet secretory cells (Ref.21). {ECO:0000269|PubMed:11169526, ECO:0000269|PubMed:20382709, ECO:0000269|PubMed:21325420, ECO:0000269|PubMed:32404436, ECO:0000269|Ref.21}

Background

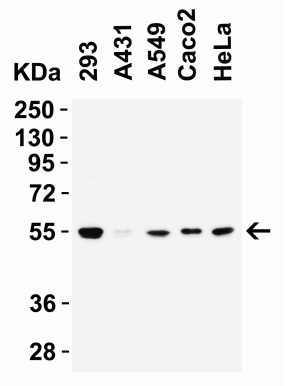
TMPRSS2 Antibody: TMPRSS2 is a plasma membrane-anchored serine protease that participates in proteolytic cascades of relevance for the normal physiologic function of the prostate. Androgen-induced TMPRSS2 activates several substrates that include pro-hepatocyte growth factor/HGF, the protease activated receptor-2/F2RL1 or matriptase/ST14 leading to extracellular matrix disruption and metastasis of prostate cancer cells. It facilitates human coronaviruses SARS-CoV and SARS-CoV-2 infections via two independent mechanisms, proteolytic cleavage of ACE2 receptor which promotes viral uptake, and cleavage of coronavirus spike glycoproteins which activates the glycoprotein for host cell entry. It proteolytically cleaves and activates the spike glycoproteins of human coronavirus 229E (HCoV-229E) and human coronavirus EMC (HCoV-EMC) and the fusion glycoproteins F0 of Sendai virus (SeV), human metapneumovirus (HMPV), human parainfluenza 1, 2, 3, 4a and 4b viruses (HPIV). TMPRSS2 is essential for spread and pathogenesis of influenza A virus (strains H1N1, H3N2 and H7N9), and it is involved in proteolytic cleavage and activation of hemagglutinin (HA) protein which is essential for viral infectivity.

References

Lucas et al. Cancer Discov. 2014; 4(11):1310-25.
Ko et al. Cancer Res. 2015; 75(14):2949-60.
Zang et al. Sci. Immunol. 2020; 5(47):eabc3582.

Images

Figure 1 WB Validation in Human Cell Lines
Loading: 15 µg of lysate Antibodies: TMPRSS2 ASC12207, 2 µg/mL , 1 h incubation at RT in 5% NFDM/TBST. Secondary: Goat Anti-Rabbit IgG HRP conjugate at 1:10,000 dilution.



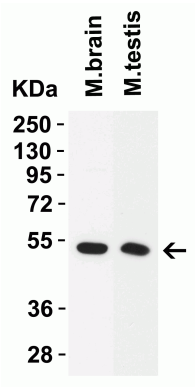


Figure 2 Western Blot Validation in Mouse Tissues
Loading: 15 µg of lysates per lane. Antibodies: TMPRSS2 ASC12207, 2 µg/mL, 1h incubation at RT in 5% NFDM/TBST. Secondary: Goat anti-rabbit IgG HRP conjugate at 1:10,000 dilution.

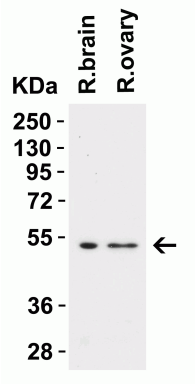


Figure 3 Western Blot Validation in Rat Tissues
Loading: 15 µg of lysates per lane. Antibodies: TMPRSS2 ASC12207, 2 µg/mL, 1h incubation at RT in 5% NFDM/TBST. Secondary: Goat anti-rabbit IgG HRP conjugate at 1:10,000 dilution.

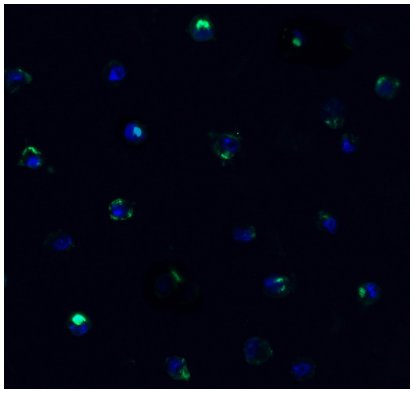
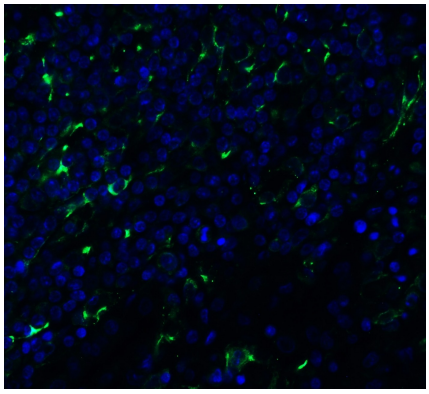


Figure 4 Immunofluorescence Validation of TMPRSS2 in A549 Cells
Immunofluorescent analysis of 4% paraformaldehyde-fixed A549 cells labeling TMPRSS2 with ASC12207 at 20 µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).

Figure 5 Immunofluorescence Validation of TMPRSS2 in Human Lung
Immunofluorescent analysis of 4% paraformaldehyde-fixed human lung labeling TMPRSS2 with ASC12207 at 20 µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).



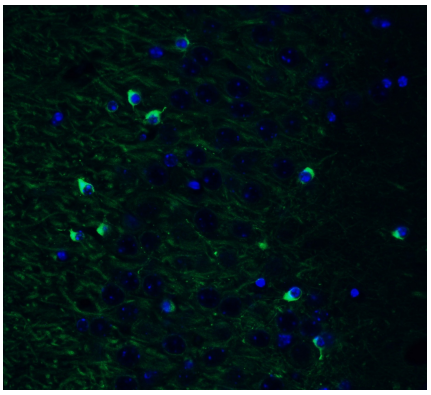


Figure 6 Immunofluorescence Validation of TMPRSS2 in Mouse Brain
Immunofluorescent analysis of 4% paraformaldehyde-fixed mouse brain labeling TMPRSS2 with ASC12207 at 20 µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).

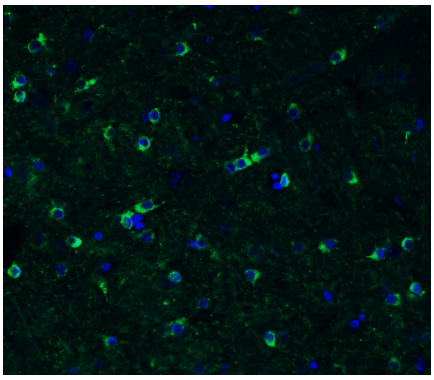


Figure 7 Immunofluorescence Validation of TMPRSS2 in Rat Brain
Immunofluorescent analysis of 4% paraformaldehyde-fixed rat brain labeling TMPRSS2 with ASC12207 at 20 µg/mL, followed by goat anti-rabbit IgG secondary antibody at 1/500 dilution (green) and DAPI staining (blue).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.