

PRODUCT INFORMATION



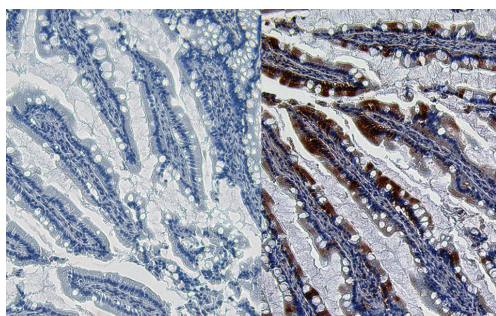
TMPRSS2 Monoclonal Antibody (Clone 3E10)

Item No. 36357

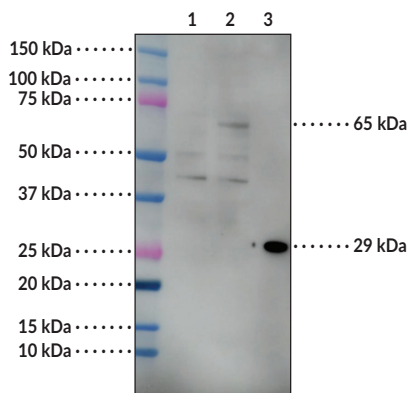
Overview and Properties

Contents:	This vial contains 200 µg of protein G-affinity purified monoclonal antibody.
Synonyms:	Epitheliasin, PRSS10, Serine Protease 10, Transmembrane Protease Serine 2, Transmembrane Serine Protease 2
Immunogen:	Recombinant human TMPRSS2
Cross Reactivity:	(+) TMPRSS2
Species Reactivity:	(+) Human; other species not tested
Molecular Weight:	~65 kDa
Uniprot No.:	O15393
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	3E10
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution is 1:1,000 for ELISA and WB and 1:500 for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Immunohistochemical staining of formalin-fixed, paraffin-embedded (FFPE) human small intestine tissue after heat-induced antigen retrieval in citrate buffer, pH 6.0, after incubation with TMPRSS2 Monoclonal Antibody (Clone 3E10) (Item No. 36357) at a 1:500 dilution (left panel, secondary alone).



Lane 1: Untransfected HEK293T Cell Lysate
Lane 2: TMPRSS2 Overexpression HEK293T Cell Lysate
Lane 3: TMPRSS2 (human, recombinant) (Item No. 35340)

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

TMPRSS2 is a type II transmembrane serine protease that has major roles in androgen receptor signaling, viral infection, and carcinogenesis.¹ TMPRSS2 is composed of an N-terminal transmembrane domain and an extracellular stem region that contains an LDL receptor class A (LDLRA) domain that binds calcium, as well as a scavenger receptor cysteine-rich (SRCR) domain that interacts with other extracellular molecules. It is synthesized as a zymogen and the C-terminal serine protease domain undergoes autoproteolytic cleavage, releasing the soluble protease into the extracellular space. *TMPRSS2* mRNA is mainly expressed in the prostate gland but is also found in the salivary and mammary glands, colon, stomach, small intestine, kidney, liver, and lung.² Soluble TMPRSS2 cleaves and activates proteinase-activated receptor 2 (PAR2) in prostate cancer cells.³ TMPRSS2 facilitates host cell entry of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) *in vitro*, and knockout of *Tmprss2* in human dipeptidyl peptidase 4-expressing transgenic mice reduces disease severity in a model of Middle East respiratory syndrome coronavirus (MERS-CoV) infection.^{4,5} Chromosomal translocations leading to *TMPRSS2-ERG* fusions are associated with prostate cancer.⁶ Cayman's TMPRSS2 Monoclonal Antibody (Clone 3E10) can be used for ELISA, immunohistochemistry (IHC), and Western blot (WB) applications. The antibody recognizes TMPRSS2 at approximately 65 kDa from human samples.

References

1. Thunders, M. and Delahunt, B. Gene of the month: *TMPRSS2* (transmembrane serine protease 2). *J. Clin. Pathol.* **73**(12), 773-776 (2020).
2. Vaarala, M.H., Porvari, K.S., Kellokumpu, S., *et al.* Expression of transmembrane serine protease TMPRSS2 in mouse and human tissues. *J. Pathol.* **193**(1), 134-140 (2001).
3. Wilson, S., Greer, B., Hooper, J., *et al.* The membrane-anchored serine protease, TMPRSS2, activates PAR-2 in prostate cancer cells. *Biochem. J.* **388**(Pt 3), 967-972 (2005).
4. Hoffmann, M., Kleine-Weber, H., Schroeder, S., *et al.* SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically proven protease inhibitor. *Cell* **181**(2), 271-280 (2020).
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6. García-Perdomo, H.A., Chaves, M.J., Osorio, J.C., *et al.* Association between TMPRSS2:ERG fusion gene and the prostate cancer: Systematic review and meta-analysis. *Cent. European J. Urol.* **71**(4), 410-419 (2018).

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