

Recombinant Active Human TMPRSS2 Protein (107-492), N-FLAG and C-Myc/His-tagged

Cat. No. TMPRSS2-13H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	The recombinant protein contains the three extracellular domains (LDLRA, SRCR, serine protease) of TMPRSS2 with a C-terminal His(6)-tag. The target sequence begins with Lys107 and ends with Gly492. The protease is in its activated form, which means that the peptide bond between Arg255 and Ile256 is cleaved.
Species	Human
Source	HEK293
ProteinLength	107-492
Description	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. This protein also facilitates entry of viruses into host cells by proteolytically cleaving and activating viral envelope glycoproteins. Viruses found to use this protein for cell entry include Influenza virus and the human coronaviruses HCoV-229E, MERS-CoV, SARS-CoV and SARS-CoV-2 (COVID-19 virus). Alternatively spliced transcript variants encoding different isoforms have been found

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for this gene.

Bio-activity

Recombinant human TMPRSS2 cleaves the synthetic substrate Z-Gly-Gly-Arg-AMC with high efficiency ($k_{cat}/K_M = 2 \times 10^5 \text{ M}^{-1}\text{s}^{-1}$). Its natural inhibitor HAI-2 completely blocks the TMPRSS2 activity at 1:1 molar ratio.

Molecular Mass

50 kDa (including tags)

AA Sequence

KFMGSKCSNSGIECDSSGTCINPSNWCDGVSHCPGGEDENRCVRLYGPNFILQVY
SSQRKSWHPVCQDDWNENYGRAACRDMGYKNNFYSSQGIVDDSGSTSFMKLNTS
AGNVDIYKKLYHSDACSSKAVVSLRCIACGVNLNSSRQSRIVGGESALPGAWPWQV
SLHVQNVHVC GSGSIITPEWIVTAAHCVEKPLNNPWHWTAFAGILRQSFMYGAGYQ
VEKVISHPNYDSKTKNNDIALMKLQKPLTFNDLVKPVCLPNPGMMLQPEQLCWISG
WGATEEKGKTSEVLNAAKVLLIETQRCNSRYVVDNLITPAMICAGFLQGNVDSCQGD
SGGPLVTSKNNIWWLIGDTSWGSGCAKAYRPGVYGNVMVFTDWIYRQMRADG

Purity

More than 90% as determined by SDS-PAGE.

Storage Buffer

0.15 mg/mL TMPRSS2 in 20mM HEPES, pH 7.4, 150mM NaCl.

GENE INFORMATION

Gene Name

TMPRSS2 transmembrane serine protease 2 [Homo sapiens (human)]

Official Symbol

TMPRSS2

Synonyms

TMPRSS2; transmembrane serine protease 2; PRSS10; transmembrane protease serine 2; epitheliasin; serine protease 10; transmembrane protease, serine 2; EC 3.4.21.-

Gene ID

7113

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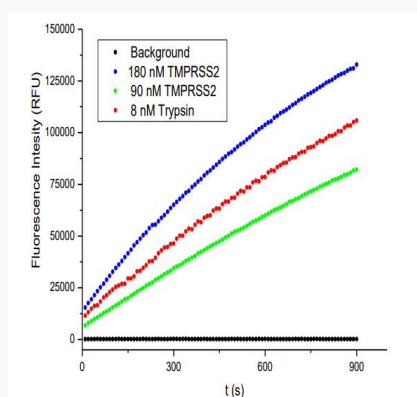
mRNA Refseq NM_005656

Protein Refseq NP_005647

MIM 602060

UniProt ID O15393

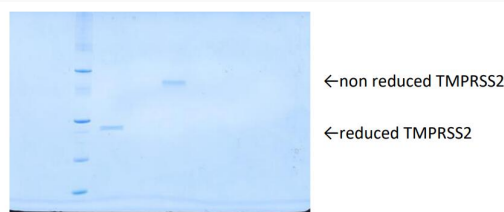
Enzymatic activity



Enzymatic activity of the recombinant TMPRSS2 on Z-GGR-AMC substrate (50μM). The enzymatic activity of the recombinant TMPRSS2 is comparable to that of trypsin.

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SDS-PAGE



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In nonreducing SDS gel the polypeptide chains (50 kDa) are held together by disulfide bonds. Under reducing condition, the active serine protease domain (26 kDa) is clearly visible.

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