

TMPRSS2 Protein, Human (R255Q, HEK293, His)

Cat. No.:	HY-P72044
Synonyms:	Serine protease 10
Species:	Human
Source:	HEK293
Accession:	O15393-1 (W106-G492, R255Q)
Gene ID:	7113
Molecular Weight:	Approximately 46.71 kDa

PROPERTIES

AA Sequence	<pre> WKFMGSKCSN SGI ECDSSGT CINPSNWCDG VSHCPGG EDE NRCVRLYGPN FILQVYSSQR KSWHPVCQDD WNENYGRAAC RDMGYKNNFY SSQGI VDDSG STSFMKLNTS AGNVDIYKKL YHSDACSSKA VVSLRCIACG VNLNSSRQSQ IVGGESALPG AWPWQVSLHV QNVHVC GGS I ITPEWIVTAA HCVEKPLNNP WHWTAFA GIL RQSFMFY GAG YQVEKVISHP NYDSKTKNND IALMKLQKPL TFNDLVK PVC LPNPGMMLQP EQLC WISGWG ATEEKGKTSE VLNAAKVLLI ETQRCNSRYV YDNLITPAMI CAGFLQGNVD SCQGDSGGPL VTSKNNIWWL IGDTSWGS GC AKAYRPGVYG NVMVFTDWIY RQMRADG </pre>
Biological Activity	Data is not available.
Appearance	Solution.
Formulation	Supplied as a 0.2 µm filtered solution of 10 mM Tris-HCl, 150 mM NaCl, 50% glycerin, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	TMPRSS2 Protein, a plasma membrane-anchored serine protease, exhibits a distinct role in various physiological and
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pathological processes. Known for its cleavage activity at arginine residues, TMPRSS2 plays a pivotal role in proteolytic cascades crucial for the normal physiological function of the prostate. In the context of prostate cancer, androgen-induced TMPRSS2 activation leads to the cleavage of substrates like pro-hepatocyte growth factor/HGF, protease-activated receptor-2/F2RL1, and matriptase/ST14, promoting extracellular matrix disruption and metastasis. Additionally, TMPRSS2 contributes to the modulation of pain sensitivity by activating trigeminal neurons, influencing both spontaneous pain and mechanical allodynia. In the realm of microbial infection, TMPRSS2 plays a critical role in facilitating infections by human coronaviruses SARS-CoV and SARS-CoV-2 through two independent mechanisms: the proteolytic cleavage of the ACE2 receptor, promoting viral uptake, and the cleavage of coronavirus spike glycoproteins, activating the glycoprotein for host cell entry. This protease is also essential for the spread and pathogenesis of influenza A virus, participating in the proteolytic cleavage and activation of the hemagglutinin (HA) protein, which is indispensable for viral infectivity. The diverse functions of TMPRSS2 underscore its significance in both normal physiological processes and disease pathogenesis.

Caution: Product has not been fully validated for medical applications. For research use only.

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