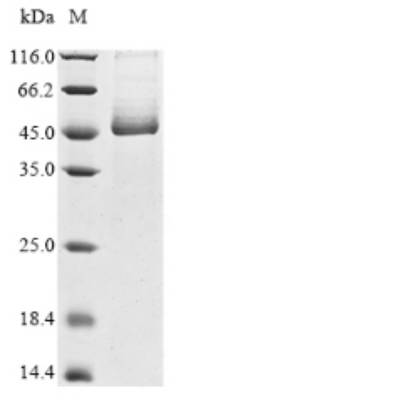
Recombinant Human Transmembrane protease serine 2 (TMPRSS2), partial (Active)

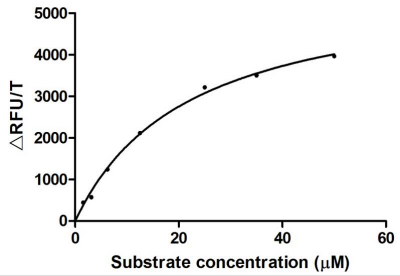
Product Code	CSB-YP023924HU
Relevance	Plasma membrane-anchored serine protease that participates in proteolytic cascades of relevance for the normal physiologic function of the prostate (PubMed:25122198). Androgen-induced TMPRSS2 activates several substrates that include pro-hepatocyte growth factor/HGF, the protease activated receptor-2/F2RL1 or matriptase/ST14 leading to extracellular matrix disruption and metastasis of prostate cancer cells (PubMed:15537383, PubMed:26018085, PubMed:25122198). In addition, activates trigeminal neurons and contribute to both spontaneous pain and mechanical allodynia
Abbreviation	Recombinant Human TMPRSS2 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	O15393
Form	Liquid or Lyophilized powder
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Biological Activity	①Recombinant Human TMPRSS2 His tag protein (CSB-YP023924HU) enzyme activity is measured by its ability to cleave fluorogenic peptide substrate(Boc-Gln-Ala-Arg-AMC), The Km is 21.93μM. ②Measured by Camostat Mesylate inhibit ratio on TMPRSS2 (CSB-YP023924HU), which can cleave fluorogenic peptide substrate (Boc-Gln-Ala-Arg-AMC). The Camostat Mesylate inhibit EC50 is 0.03347-0.07945μM.
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	WKFMGSKCSNSGIECDSSGTCINPSNWCDGVSHCPGGEDENRCVRLYGPNF ILQVYSSQRKSWHPVCQDDWNENYGRAACRDMGYKNNFYSSQGIVDDSGST SFMKLNTSAGNVDIYKKLYHSDACSSKAVVSLRCIACGVNLNSSRQSRIVGGE SALPGAWPWQVSLHVQNVHVCGGSIITPEWIVTAAHCVEKPLNNPWHWTAFA GILRQSFMFYGAGYQVEKVISHPNYDSKTKNNDIALMKLQKPLTFNDLVKPVCL PNPGMMLQPEQLCWISGWGATEEKGKTSEVLNAAKVLLIETQRCNSRYVYDN LITPAMICAGFLQGNVDSCQGDSGGPLVTSKNNIWWLIGDTSWGSGCAKAYR PGVYGNVMVFTDWIYRQMRADG
Research Area	Cancer
Source	Yeast
Target Names	TMPRSS2
Protein Names	Transmembrane protease serine 2

Expression Region	106-492 aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	44.8kDa
Protein Length	Partial

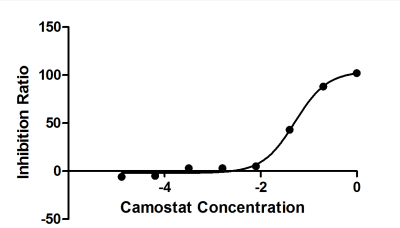
Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Recombinant Human TMPRSS2 His tag protein (CSB-YP023924HU) enzyme activity is measured by its ability to cleave fluorogenic peptide substrate(Boc-Gln-Ala-Arg-AMC), The Km is 21.93μM.



Activity
Measured by Camostat Mesylate inhibit ratio on TMPRSS2 (CSB-YP023924HU), which can cleave fluorogenic peptide substrate (Boc-Gln-Ala-Arg-AMC). The Camostat Mesylate inhibit EC_{50} is 0.03347-0.07945μM.

Description

The recombinant active human Transmembrane protease serine 2 (TMPRSS2) is produced by the expression of a target DNA sequence with 6xHis, N-terminal tag(s), in the yeast expression system. The target DNA sequence encodes the 106-492aa region of the human TMPRSS2. The purity of this partial-length protein is greater than 85% determined by SDS-PAGE. The gel showed a molecular weight band of about 45 kDa under reducing conditions. And its enzymatic activity was verified by its ability to cleave fluorogenic peptide substrate (Boc-Gln-Ala-Arg-AMC) (Km is 21.93μM).

The protease TMPRSS2 plays an important role in the infection mechanism of human coronaviruses, such as SARS-CoV and SARS-CoV-2. Cell entry of

	human coronaviruses depends on the binding of the viral spike (S) glycoprotein to cellular ACE2 receptor and S protein priming by host cell protease TMPRSS2. Moreover, TMPRSS2 protein is commonly used to study cancer. Previous studies have shown that the TMPRSS2 gene was up-regulated by androgenic hormones in prostate cancer cells and down-regulated in androgen-independent prostate cancer tissue.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.