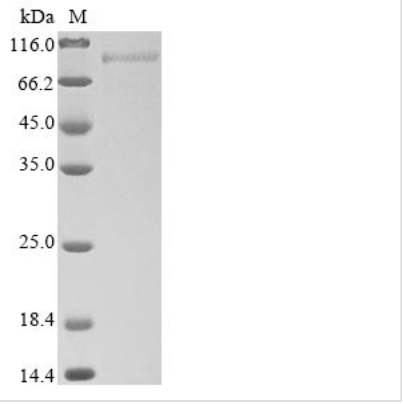
Recombinant Human T-cell immunoglobulin and mucin domain-containing protein 4 (TIMD4), partial

Product Code	CSB-MP850304HUi3
Abbreviation	Recombinant Human TIMD4 protein, partial
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.	Q96H15
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	ETVVTEVLGHRVTLPCLYSSWSHNSNSMCWGKDQCPYSGCKEALIRTDGMR VTSRKSAKYRLQGTIPRGDVSLTILNPSESDSGVYCCRIEVPGWFNDVKINVRL NLQRASTTTHRTATTTTRRTTTTSPTTTRQMTTTPAALPTTVVTTPDLTTGTPL QMTTIAVFTTANTCLSLTPSTLPEEATGLLTPEPSKEGPILTAESETVLPSDSWS SVESTSADTVLLTSKESKVWDLPSTSHVSMWKTSDSVSSPQPGASDTAVPEQ NKTTKTGQMDGIPMSMKNEMPISQ
Research Area	Immunology
Source	Mammalian cell
Target Names	TIMD4
Expression Region	25-314aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 6xHis-hFc1-tagged
Mol. Weight	61.1 kDa
Protein Length	Partial
Image	



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

Description

Recombinant Human TIMD4 is produced using a mammalian expression system and spans amino acids 25 to 314 of the complete protein. The product includes a C-terminal 6xHis-hFc1 tag that aids in purification and detection. SDS-PAGE analysis confirms the protein achieves high quality with purity levels exceeding 85%. This product is designed for research use only and appears to deliver consistent results across different experimental applications.

TIMD4 - short for T-cell immunoglobulin and mucin domain-containing protein 4 - plays what seems to be a critical role in immune regulation. The protein is involved in clearing apoptotic cells, which is essential for maintaining immune homeostasis. Researchers studying immune response pathways and cell clearance mechanisms may find this protein particularly useful for gaining deeper insights into these fundamental biological processes.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Protein-Protein Interaction Studies

This recombinant TIMD4 protein offers a way to investigate binding interactions with known ligands like phosphatidylserine on apoptotic cells, though other potential binding partners likely exist. The C-terminal His-hFc1 tag makes immobilization straightforward on nickel-based surfaces or protein A/G matrices for pull-down assays and surface plasmon resonance experiments. Since the mammalian expression system preserves proper protein folding and post-translational modifications, these features may prove critical for maintaining native binding interactions. Such studies could help reveal the molecular mechanisms behind TIMD4's role in immune recognition and cellular interactions, though the complete picture probably remains more complex than current models suggest.

2. Antibody Development and Characterization

The purified recombinant protein works well as both an immunogen and screening antigen when developing monoclonal or polyclonal antibodies against human TIMD4. With its >85% purity and proper folding from mammalian expression, the protein likely presents native-like epitopes for antibody recognition. The His-hFc1 tag simplifies purification and immobilization for ELISA-based antibody screening and characterization assays. Researchers can then validate generated antibodies for specificity using this same recombinant protein across various immunoassay formats.

3. Structural and Biophysical Analysis

This recombinant TIMD4 fragment (aa 25-314) may prove valuable for structural studies including X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy to decode the protein's three-dimensional architecture. The mammalian expression system delivers properly folded protein with native glycosylation patterns that could be important for structural integrity. Biophysical characterization techniques - dynamic light scattering, analytical ultracentrifugation, and thermal stability assays - can reveal insights into protein oligomerization states and stability, though results might vary depending on buffer conditions and protein concentration. The His tag streamlines protein purification for these analytical applications.

4. Cell-Based Binding and Uptake Assays

The recombinant TIMD4 protein works as a probe in cell-based assays to study its interaction with target cells, especially those expressing cognate receptors or displaying phosphatidylserine. The hFc1 tag enables detection using anti-human Fc antibodies in flow cytometry or fluorescence microscopy experiments. These assays can help characterize TIMD4's binding specificity and kinetics, plus potential internalization pathways in various cell types, though the biological relevance may depend on the specific cell line chosen. Mammalian expression preserves the proper folding that appears necessary for authentic cellular interactions.

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.