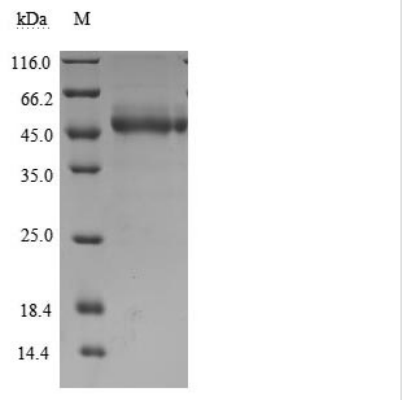
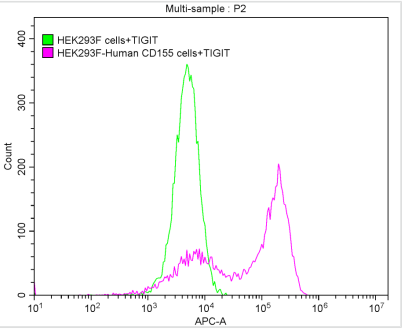
Recombinant Human T-cell immunoreceptor with Ig and ITIM domains (TIGIT), partial (Active)

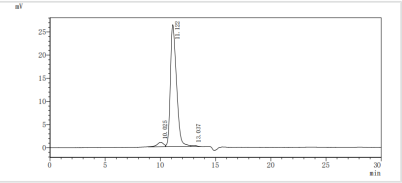
Product Code	CSB-MP675446HU
Abbreviation	Recombinant Human TIGIT protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q495A1
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, 6% Trehalose, pH 7.4
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	FACS assay shows that Human TIGIT can bind to 293F cell overexpressing human CD155.
Purity	Greater than 95% as determined by SDS-PAGE. Greater than 95% as determined by SEC-HPLC.
Sequence	MMTGTIETTGNISAEKGGSIILQCHLSSTTAQVTQVNWEQQDQLLAICNADLG WHISPSFKDRVAPGPGLGLTLQSLTVNDTGEYFCIYHTYPDGTYTGRIFLEVLE SSVAEHGARFQIP
Source	Mammalian cell
Target Names	TIGIT
Expression Region	22-141aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal hFc1-Myc-tagged
Mol. Weight	43.2 kDa
Protein Length	Partial
Image	



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



Activity
FACS assay shows that Human TIGIT can bind to 293F cell overexpressing human CD155.



The purity of Human TIGIT was greater than 95% as determined by SEC-HPLC

Description

The recombinant human TIGIT protein is expressed in mammalian cells by introducing a plasmid carrying the gene sequence for human TIGIT (22-141aa) and a C-terminal hFc-Myc-tag gene. Its purity is validated to be greater than 95% using SDS-PAGE and SEC-HPLC, and its endotoxin content is measured below 1.0 EU/μg via the LAL assay. This recombinant human TIGIT protein is active, as the FACS assay shows it can bind to 293F cells overexpressing human CD155.

The human TIGIT is a critical immune checkpoint receptor that regulates T cell responses. It is characterized by its structure, which includes an extracellular immunoglobulin variable (IgV) domain, a single transmembrane domain, and a cytoplasmic tail containing two immunoreceptor tyrosine-based inhibitory motifs (ITIMs) [1][2]. This unique configuration allows TIGIT to function as a negative regulator of immune responses, particularly in the context of T cell activation and function.

TIGIT is predominantly expressed on various immune cell types, including effector T cells, memory T cells, Tregs, and NK cells [3][4][5]. Its expression is often associated with T cell exhaustion, a state where T cells lose their ability to proliferate and produce cytokines effectively, particularly in chronic infections and cancer [3][6]. The interaction of TIGIT with its ligands, CD112 (PVRL2) and

CD155 (PVR), which are expressed on antigen-presenting cells and some tumor cells, leads to the inhibition of T cell activation and cytokine production, thereby contributing to immune evasion mechanisms in tumors [4][7].

Research has shown that TIGIT's inhibitory effects are mediated through its ITIM domains, which recruit phosphatases that dephosphorylate key signaling molecules involved in T cell activation [2][8]. This mechanism underscores the importance of TIGIT in maintaining immune homeostasis and preventing overactive immune responses that could lead to autoimmunity [4][9]. Furthermore, the modulation of TIGIT expression has been explored as a therapeutic strategy in various diseases, including autoimmune disorders and cancers, where blocking TIGIT can enhance T cell responses and improve therapeutic outcomes [4][10].

References:

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Endotoxin	Less than 1.0 EU/ug as determined by LAL method.
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.