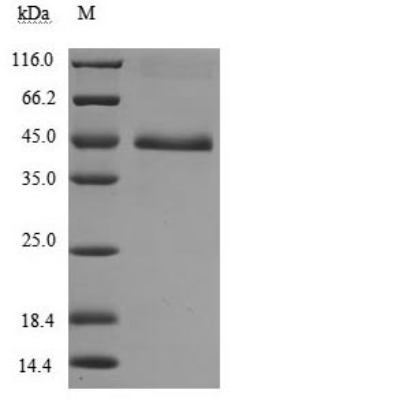
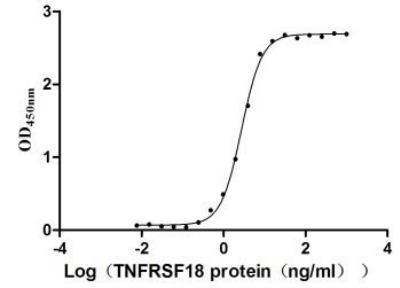
Recombinant Human Tumor necrosis factor receptor superfamily member 18 (TNFRSF18), partial (Active)

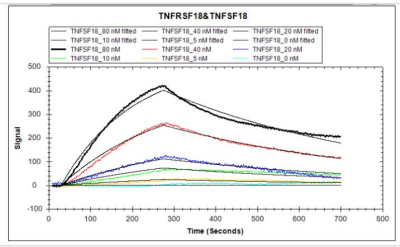
Product Code	CSB-MP896537HU
Abbreviation	Recombinant Human TNFRSF18 protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q9Y5U5
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	①Measured by its binding ability in a functional ELISA. Immobilized TNFRSF18 at 2 μg/ml can bind TNFSF18 (CSB-MP891791HU), the EC_{50} is 2.565 to 2.940 ng/ml.②Human TNFRSF18 protein hFc tag (CSB-MP896537HU) captured on COOH chip can bind Human TNFSF18 protein hFc and Flag tag (CSB-MP891791HU) with an affinity constant of 38.5 nM as detected by LSPR Assay.
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	QRPTGGPGCGPGRLLLGTGTDARCCRVHTTRCCRDYPGEECCSEWDCMCV QPEFHCGDPCCTTCRHHPCPPGQGVQSQGKFSFGFQCIDCASGTFSGGHEG HCKPWTDCTQFGFLTVFPGNKTHNAVCVPGSPPAEP
Source	Mammalian cell
Target Names	TNFRSF18
Expression Region	26-162aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal hFc1-tagged
Mol. Weight	40.8 kDa
Protein Length	Partial
Image	



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



Activity
Measured by its binding ability in a functional ELISA. Immobilized TNFRSF18 at 2 μg/ml can bind TNFSF18 (CSB-MP891791HU), the EC_{50} is 2.565 to 2.940 ng/ml.



Activity
Human TNFRSF18 protein hFc tag (CSB-MP896537HU) captured on COOH chip can bind Human TNFSF18 protein hFc and Flag tag (CSB-MP891791HU) with an affinity constant of 38.5 nM as detected by LSPR Assay.

Description

The recombinant human TNFRSF18 protein is expressed in mammalian cells from a plasmid containing the gene of interest. The gene of interest corresponds to the 26-162aa of the human TNFRSF18 and is fused with a C-terminal hFc-tag gene. Its purity is over 90% as confirmed by SDS-PAGE, and its endotoxin content is less than 1.0 EU/μg as measured by the LAL method. Its biological activity is proven via ELISA and LSPR assay. In a functional ELISA, this human TNFRSF18 protein binds to the TNFSF18 (CSB-MP891791HU), with the EC_{50} of 2.565 to 2.940 ng/ml. In an LSPR assay, it binds to the human TNFSF18 protein (CSB-MP891791HU) with an affinity constant of 38.5 nM.

Human TNFRSF18 (GITR) is a crucial component of the immune system, particularly in regulating T-cell responses. As a member of the TNFR superfamily, TNFRSF18 plays a significant role in modulating immune responses, especially within the tumor microenvironment (TME) [1][2][3]. TNFRSF18 is predominantly expressed on Tregs and other activated immune cells, where its expression is upregulated in the TME. This upregulation is positively correlated with the immunosuppressive functions of Tregs, suggesting that TNFRSF18 may facilitate the maintenance of immune tolerance in cancer [1][4].

In the context of cancer, TNFRSF18 has been implicated in various malignancies. In multiple myeloma, TNFRSF18 expression is silenced due to promoter methylation, leading to enhanced tumor proliferation. Restoration of TNFRSF18 expression in deficient myeloma cells has been shown to inhibit cell growth and induce apoptosis, highlighting its potential as a tumor suppressor [5][6]. Additionally, TNFRSF18 has been identified as a marker for specific Treg subtypes, such as FOXP3+IL10+ Tr1 cells, which are associated with immunosuppressive environments in tumors [1][4].

The signaling pathways activated by TNFRSF18 involve various adaptor proteins, including TNF Receptor Associated Factors (TRAFs), which mediate downstream signaling through pathways such as NF-κB and MAPK [2][6]. These pathways are critical for regulating cell survival, proliferation, and apoptosis, further emphasizing the importance of TNFRSF18 in immune regulation and tumor biology [2][6][7].

References:

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[3] S. Ronchetti, M. Petrillo, L. Cari, G. Migliorati, G. Nocentini, & C. Riccardi. Glucocorticoid-induced tumour necrosis factor receptor-related protein: a key marker of functional regulatory t cells, Journal of Immunology Research, vol. 2015, p. 1-17, 2015. https://doi.org/10.1155/2015/171520

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[5] D. Xiong. Tumor intrinsic immunity related proteins may be novel tumor suppressors in some types of cancer, Scientific Reports, vol. 9, no. 1, 2019. https://doi.org/10.1038/s41598-019-47382-3

[6] J. Li, N. Liu, L. Tang, B. Yan, X. Chen, J. Zhang, et al. The relationship between traf6 and tumors, Cancer Cell International, vol. 20, no. 1, 2020. https://doi.org/10.1186/s12935-020-01517-z

[7] H. Shen, L. Li, S. Yang, D. Wang, S. Zhou, X. Chen, et al. Regulatory role of tumor necrosis factor receptor-associated factor 6 in breast cancer by activating the protein kinase b/glycogen synthase kinase 3β signaling pathway, Molecular Medicine Reports, vol. 16, no. 2, p. 2269-2273, 2017. https://doi.org/10.3892/mmr.2017.6782

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.