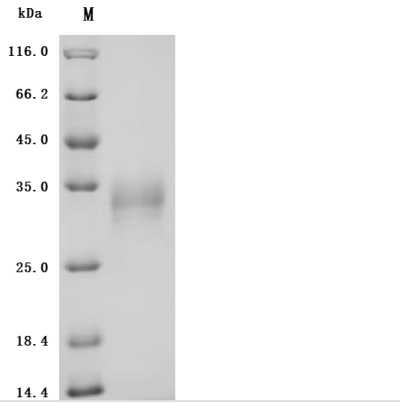
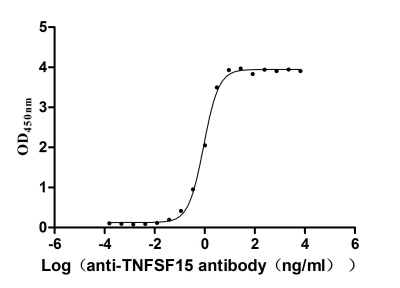
Recombinant Human Tumor necrosis factor ligand superfamily member 15(TNFSF15) (Active)

Product Code	CSB-MP023992HU(F2)
Abbreviation	Recombinant Human TNFSF15 protein (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.	O95150-2
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	Measured by its binding ability in a functional ELISA. Immobilized Human TNFSF15 at 2 μg/mL can bind Anti-TNFSF15 recombinant antibody(CSB-RA023992MA1HU). The EC50 is 0.8389-0.9731 ng/mL.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	MQLTKGRLHFSHPLSHTKHISPFVTDAPLRADGDKPRAHLTVVRQTPTQHFKN QFPALHWEHELGLAFTKNRMNYTNKFLLIPESGDYFIYSQVTFRGMTSECSEIR QAGRPNKPDSITVVITKVTDSYPEPTQLLMGTKSVCEVGSNWFQPIYLGAMFS LQEGDKLMVNVSDISLVDYTKEDKTFFGAFLL
Source	Mammalian cell
Target Names	TNFSF15
Expression Region	1-192aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4? for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	24.6 kDa
Protein Length	Full Length of Isoform 2
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 Human TNFSF15 at 2 μg/ml can bind Anti-TNFSF15 recombinant antibody(CSB-RA023992MA1HU). The EC_{50} is 0.8389-0.9731 ng/mL.

Description

The production of the recombinant human TNFSF15 protein includes gene cloning, plasmid construction, protein expression, protein purification, and protein analysis. Design appropriate primers to amplify the gene fragment corresponding to 1-192 amino acids (aa) of the human TNFSF15 protein. The amplified target gene fragment is cloned into the plasmid together with the N-terminal 10xHis-tag gene. The recombinant plasmid is transfected into mammalian cells using a transfection reagent. After 24 hours of transfection, the medium is replaced with a selective antibiotic to screen the successfully transfected cells for protein expression. After that, the cells are lysed to release the TNFSF15 protein. The recombinant TNFSF15 protein is purified from the cell culture supernatant through Ni-NTA affinity chromatography. The purity of the recombinant TNFSF15 protein is analyzed by SDS-PAGE, which is greater than 95%. The endotoxin content of the TNFSF15 protein is detected by the LAL method, which is less than 1.0 EU/ug. The protein can bind to the TNFSF15 recombinant antibody (CSB-RA023992MA1HU) in a functional ELISA, with the EC_{50} of 0.8389-0.9731 ng/mL.

Human TNFSF15, also known as TL1A, is a cytokine involved in immune regulation, inflammation, and vascular homeostasis. It is part of the TNF superfamily and is primarily expressed in macrophages and T cells, particularly under pro-inflammatory conditions [1]. TNFSF15 is known to interact with the death receptor 3 (DR3), providing co-stimulatory signals that enhance T-helper 17 cell differentiation and proliferation, thereby amplifying the inflammatory response [1][2]. This interaction is crucial for the modulation of immune responses, particularly in conditions like inflammatory bowel disease (IBD) and various cancers [3].

TNFSF15 is implicated in various pathological conditions, including cancer and

autoimmune diseases. Studies have shown that TNFSF15 promotes lymphangiogenesis and metastasis in cancer models, particularly through the upregulation of vascular endothelial growth factor C (VEGF-C), suggesting TNFSF15's role in tumor progression and metastasis [4].

TNFSF15 has been identified as a negative regulator of neovascularization, which is critical for maintaining vascular homeostasis [5]. It inhibits the production of VEGF, a key pro-angiogenic factor, thereby contributing to the stability of established blood vessels [6].

References:
[1] M. Zucchelli, M. Camilleri, A. Andréasson, F. Bresso, A. Dlugosz, J. Halfvarson, et al. Association of tnfsf15 polymorphism with irritable bowel syndrome, Gut, vol. 60, no. 12, p. 1671-1677, 2011. https://doi.org/10.1136/gut.2011.241877
[2] R. Sun, M. Hedl, & C. Abraham. Tnfsf15 promotes antimicrobial pathways in human macrophages and these are modulated by tnfsf15 disease-risk variants, Cellular and Molecular Gastroenterology and Hepatology, vol. 11, no. 1, p. 249-272, 2021. https://doi.org/10.1016/j.jcmgh.2020.08.003
[3] A. Richard, J. Peters, N. Savinykh, J. Lee, E. Hawley, F. Meylan, et al. Reduced monocyte and macrophage tnfsf15/tl1a expression is associated with susceptibility to inflammatory bowel disease, Plos Genetics, vol. 14, no. 9, p. e1007458, 2018. https://doi.org/10.1371/journal.pgen.1007458
[4] T. Qin, D. Huang, Z. Liu, Y. Jia, X. Chen, & K. Li. Tumor necrosis factor superfamily 15 promotes lymphatic metastasis via upregulation of vascular endothelial growth factor?c in a mouse model of lung cancer, Cancer Science, vol. 109, no. 8, p. 2469-2478, 2018. https://doi.org/10.1111/cas.13665
[5] F. Jiang, Q. Chen, L. Huang, Y. Wang, Z. Zhang, X. Meng, et al. Tnfsf15 inhibits blood retinal barrier breakdown induced by diabetes, International Journal of Molecular Sciences, vol. 17, no. 5, p. 615, 2016. https://doi.org/10.3390/ijms17050615
[6] P. Liang, F. Tian, Y. Lü, B. Duan, D. Stolz, & L. Li. Vascular endothelial growth inhibitor (vegi; tnfsf15) inhibits bone marrow-derived endothelial progenitor cell incorporation into lewis lung carcinoma tumors, Angiogenesis, vol. 14, no. 1, p. 61-68, 2010. https://doi.org/10.1007/s10456-010-9195-8

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?/-80?. 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.