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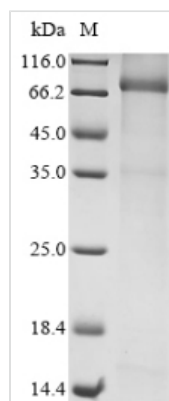
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Recombinant Human Mannan-binding lectin serine protease 2 (MASP2)

Product Code	CSB-EP013510HU
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.	O00187
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	TPLGPKWPEPVFGRLASPGFPGHEYANDQERRWTLTAPPGYRLRLYFTHFDLE LSHLCEYDFVKLSSGAKVLATLCGQESTDTERAPGKDTFYSLGSSLDITFRSDY SNEKPFTGFEAFYAAEDIDECQVAPGEAPTCDDHHCHNHLGGFYCSCRAGYVL HRNKRTCSALCSGQVFTQRSGELSSPEYPRPYPKLSSCTYSISLEEGFSVILDF VESFDVETHPETLCPYDFLKIQTDRREEHGPFCKGKTLPHRIETKSNTVTITFVTDE SGDHTGWKIHYTSTAQPCPYPMAPPNGHVSPVQAKYILKDSFSIFCETGYELL QGHLPLKSFTAVCQKDGSWDRPMPACSI VDCGPPDDLPSGRVEYITGPGVTT YKAVIQYSCEETFYTMKVNDGKYVCEADGFWTSSKGEKSLPVCEPVCGLSAR TTGGRIYGGQKAKPGDFPWQVLILGGTTAAGALLYDNWVLTAAHAVYEQKHD ASALDIRMGTLKRLSPHYTQAWSEAVFIHEGYTHDAGFDNDIALIKLNNKVINS NITPICLPRKEAESFMRTDDIGTASGWGLTQRGFLARNLMYVDIPIVDHQKCTA AYEKPPYPRGSVTANMLCAGLES GGK DSCRGDSSGALVFLDSETERW FVGGI VSWGSMNCGEAGQYGVYTKVINIYIPWIENIISDF
Research Area	Cardiovascular
Source	E.coli
Target Names	MASP2
Expression Region	16-686aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	79.2 kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

The generation of recombinant human Mannan-binding lectin serine protease 2 (MASP2) in *E. coli* involves co-cloning the target gene into an expression vector with N-terminal 10xHis-tag and C-terminal Myc-tag gene, which is transformed into *E. coli* cells. The target gene corresponds to the 16-686aa of human MASP2 protein. These cells are cultured for the protein expression. The cells are lysed to release the expressed protein, which is purified using affinity chromatography. Protein purity is assessed with SDS-PAGE, exceeding 85%.

Human MASP2 is a crucial component in the lectin pathway of the complement system. MASP2 plays a significant role in activating the lectin pathway by cleaving C4, which initiates the complement cascade [1]. This activation process involves the formation of complexes such as C4bC2, which are then cleaved by activated C1s or MASP2 [2]. Research revealed that MASP2 is present in human kidneys and is involved in the proteolytic activation of the epithelial sodium channel [3].

MASP2 deficiency has been associated with various conditions, including tuberculosis susceptibility [4] and pulmonary tuberculosis [5]. Studies have shown that MASP2 interacts with other proteins like MBL and forms complexes that activate the complement system [6]. MASP2 gene polymorphisms have been linked to hepatocellular carcinoma [7] and human T-lymphotropic virus type 1 infection [8].

References:

- [1] M. Navarrete, J. Ho, O. Krokhin, P. Ezzati, C. Rigatto, M. Reslerova et al., Proteomic characterization of serine hydrolase activity and composition in normal urine, *Clinical Proteomics*, vol. 10, no. 1, 2013. <https://doi.org/10.1186/1559-0275-10-17>
- [2] V. Krishnan, Y. Xu, K. Macon, J. Volanakis, & S. Narayana, The structure of c2b, a fragment of complement component c2 produced during c3 convertase formation, *Acta Crystallographica Section D Biological Crystallography*, vol. 65, no. 3, p. 266-274, 2009. <https://doi.org/10.1107/s0907444909000389>
- [3] R. Zachar, S. Thiel, S. Hansen, M. Henriksen, M. Skjoedt, K. Skjødtt et al., Mannan-binding lectin serine protease-2 (masp-2) in human kidney and its relevance for proteolytic activation of the epithelial sodium channel, *Scientific Reports*, vol. 12, no. 1, 2022. <https://doi.org/10.1038/s41598-022-20213-8>
- [4] Z. Li, M. Wang, H. Zhong, X. Huang, X. Wu, X. Zhanget al., Impact of masp2



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[5] A. Sokołowska, A. Szala, A. Wierzko, M. Kozińska, T. Niemiec, M. Błażniak et al., Mannan-binding lectin-associated serine protease-2 (masp-2) deficiency in two patients with pulmonary tuberculosis and one healthy control, *Cellular and Molecular Immunology*, vol. 12, no. 1, p. 119-121, 2014.

<https://doi.org/10.1038/cmi.2014.19>

[6] M. Henriksen, J. Brandt, J. Andrieu, C. Nielsen, P. Jensen, U. Holmskovet al., Heteromeric complexes of native collectin kidney 1 and collectin liver 1 are found in the circulation with masps and activate the complement system, *The Journal of Immunology*, vol. 191, no. 12, p. 6117-6127, 2013.

<https://doi.org/10.4049/jimmunol.1302121>

[7] L. Segat, A. Fabris, L. Padovan, M. Milanese, D. Pirulli, F. Lupo et al., Mbl2 and masp2 gene polymorphisms in patients with hepatocellular carcinoma, *Journal of Viral Hepatitis*, vol. 15, no. 5, p. 387-391, 2008.

<https://doi.org/10.1111/j.1365-2893.2008.00965.x>

[8] A. Aghamohammadi, H. Rafatpanah, M. Maghsoodlu, N. Tohidi, F. Mollahosseini, & M. Shahabi, Mannose binding lectin-associated serine protease 2 (masp2) gene polymorphism and susceptibility to human HTLV-1 infection in blood donors from Mashhad, Iran, *Microbiology and Immunology*, vol. 66, no. 10, p. 460-464, 2022.

<https://doi.org/10.1111/1348-0421.13022>

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.