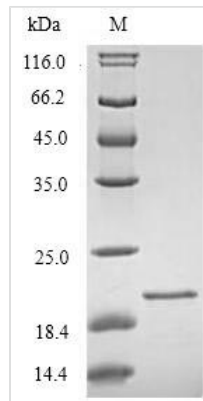




Recombinant Human Triggering receptor expressed on myeloid cells 2 (TREM2), partial

Product Code	CSB-EP024405HU
Relevance	May have a role in chronic inflammations and may stimulate production of constitutive rather than inflammatory chemokines and cytokines. Forms a receptor signaling complex with TYROBP and triggers activation of the immune responses in macrophages and dendritic cells.
Abbreviation	Recombinant Human TREM2 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.	Q9NZC2
Alias	Triggering receptor expressed on monocytes 2
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	HNTTVFQGVAGQSLQVSCPYDSMKHWGRRKAWCRQLGEKGPCQRVVSTHN LWLLSFLRRWNGSTAITDDLGGTLTITLRNLQPHDAGLYQCQSLHGSEADTL RKVLVEVLADPLDHRDAGDLWFPGESSEFEDAHVEHSISRSLLEGEIPFPPTS
Research Area	Immunology
Source	E.coli
Target Names	TREM2
Expression Region	19-174aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	21.4kDa
Protein Length	Extracellular Domain
Image	



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

Description

The production of the recombinant human TREM2 protein with an N-terminal 6xHis-tag in *E. coli* includes cloning the gene that codes for the extracellular domain of the human TREM2, incorporating the His-tag sequence, into a suitable vector, transforming it into *E. coli* cells, and inducing protein expression. The positive *E. coli* cells are lysed to release the 6xHis-tagged recombinant TREM2 protein, which is subjected to nickel affinity chromatography purification. The purity of this recombinant TREM2 protein is assessed by SDS-PAGE, exceeding 90%.

The human TREM2 protein is a type I transmembrane glycoprotein predominantly expressed on myeloid-derived cells, including microglia, macrophages, dendritic cells, and osteoclasts. It plays a critical role in modulating the immune response and is involved in various biological functions, including cell survival, proliferation, differentiation, phagocytosis, and inflammatory responses [1]. TREM2 is essential in neuroinflammation and neurodegenerative diseases, including Alzheimer's disease, by regulating microglial activities linked to neurological disorders [2]. Furthermore, TREM2 facilitates adipogenesis and contributes to diet-induced obesity [3].

The TREM2 protein has been implicated in various functions, including regulating microglial responses to neuronal injury and impacting chemotaxis [4]. Moreover, TREM2 has been associated with synaptic pruning and normal brain connectivity, with reduced TREM2 protein expression observed in individuals within the age range corresponding to synaptic pruning in humans [5]. Studies have also highlighted the role of TREM2 in mediating microglial neuroprotection and phagocytic clearance of pathological proteins, indicating its involvement in neurodegenerative processes [6].

References:

- [1] C. Liu, P. Li, H. Li, S. Wang, L. Ding, H. Wanget al., Trem2 regulates obesity-induced insulin resistance via adipose tissue remodeling in mice of high-fat feeding, *Journal of Translational Medicine*, vol. 17, no. 1, 2019.
<https://doi.org/10.1186/s12967-019-2050-9>
- [2] S. Carmona, K. Zahs, E. Wu, K. Dakin, J. Brás, & R. Guerreiro, The role of trem2 in alzheimer's disease and other neurodegenerative disorders, *The Lancet Neurology*, vol. 17, no. 8, p. 721-730, 2018.
[https://doi.org/10.1016/s1474-4422\(18\)30232-1](https://doi.org/10.1016/s1474-4422(18)30232-1)



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[4] S. Jin, B. Benitez, C. Karch, B. Cooper, T. Skorupa, D. Carrellet et al., Coding variants in trem2 increase risk for alzheimer's disease, *Human Molecular Genetics*, vol. 23, no. 21, p. 5838-5846, 2014.

<https://doi.org/10.1093/hmg/ddu277>

[5] F. Mazaheri, N. Snaidero, G. Kleinberger, C. Madore, A. Daria, G. Werner et al., trem2 deficiency impairs chemotaxis and microglial responses to neuronal injury, *Embo Reports*, vol. 18, no. 7, p. 1186-1198, 2017.

<https://doi.org/10.15252/embr.201743922>

[6] F. Filipello, R. Morini, I. Corradini, V. Zerbi, A. Canzi, B. Michalski et al., The microglial innate immune receptor trem2 is required for synapse elimination and normal brain connectivity, *Immunity*, vol. 48, no. 5, p. 979-991.e8, 2018.

<https://doi.org/10.1016/j.immuni.2018.04.016>

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.