# Recombinant Human Toll-like receptor 8 (TLR8), partial

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| **Product Code** | CSB-YP023607HU |
| **Relevance** | Key component of innate and adaptive immunity. TLRs (Toll-like receptors) control host immune response against pathogens through recognition of molecular patterns specific to microorganisms. Acts via MYD88 and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response. |
| **Abbreviation** | Recombinant Human TLR8 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.** | Q9NR97 |
| **Product Type** | Recombinant Proteins |
| **Immunogen Species** | Homo sapiens (Human) |
| **Purity** | Greater than 90% as determined by SDS-PAGE.<br>Greater than 90% as determined by SEC-HPLC. |
| **Sequence** | EENFSRSYPCDEKKQNDSVIAECSNRRLQEVPQTVGKYVTELDLSDNFITHITN<br>ESFQGLQNLTKINLNHNPNVQHQNGNPGIQSNGLNITDGAFLNLKNLRELLLED<br>NQLPQIPSGLPESLTELSLIQNNIYNITKEGISRLINLKNLYLAWNCYFNKVCEKT<br>NIEDGVFETLTNLELLSLSFNSLSHVPPKLPSSLRKLFLSNTQIKYISEEDFKGLI<br>NLTLLDLSGNCPRCFNAPFPCVPCDGGASINIDRFAFQNLTQLRYLNLSSTSLR<br>KINAAWFKNMPHLKVLDLEFNYLVGEIASGAFLTMLPRLEILDLSFNYIKGSYPQ<br>HINISRNFSKLLSLRALHLRGYVFQELREDDFQPLMQLPNLSTINLGINFIKQIDF<br>KLFQNFSNLEIIYLSENRISPLVKDTRQSYANSSSFQRHIRKRRSTDFEFDPHSN<br>FYHFTRPLIKPQCAAYGKALDLSLNSIFFIGPNQFENLPDIACLNLSANSNAQVL<br>SGTEFSAIPHVKYLDLTNNRLDFDNASALTELSDLEVLDLSYNSHYFRIAGVTH<br>HLEFIQNFTNLKVLNLSHNNIYTLTDKYNLESKSLVELVFSGNRLDILWNDDDNR<br>YISIFKGLKNLTRLDLSLNRLKHIPNEAFLNLPASLTELHINDNMLKFFNWTLLQQ<br>FPRLELLDLRGNKLLFLTDSLSDFTSSLRTLLLSHNRISHLPSGFLSEVSSLKHL<br>DLSSNLLKTINKSALETKTTTKLSMLELHGNPFECTCDIGDFRRWMDEHLNVKI<br>PRLVDVICASPGDQRGKSIVSLELTTCVSDVT |
| **Research Area** | Immunology |
| **Source** | Yeast |
| **Target Names** | TLR8 |
| **Protein Names** | Recommended name: Toll-like receptor 8Alternative name(s): CD_antigen= CD288 |
| **Expression Region** | 27-827 |

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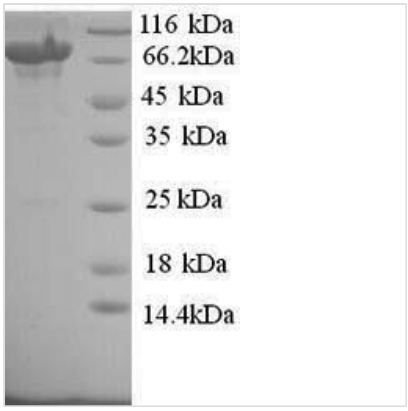
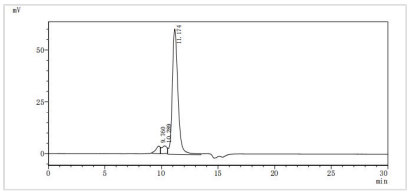
| **Notes** | Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week. |
| **Tag Info** | N-terminal 6xHis-tagged |
| **Mol. Weight** | 93.5kDa |
| **Protein Length** | partial |

**Image**




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



The purity of TLR8 was greater than 90% as determined by SEC-HPLC

**Description**

CUSABIO's product CSB-YP023607HU was recombinantly expressed in yeast, with an N-terminal s6xHis-tag. Its expression region corresponds to the 27-827aa of the human TLR8 protein. The purity of this recombinant human TLR8 protein is greater than 90% as measured by SDS-PAGE.

Human TLR8 is expressed in human monocytes, macrophages, neutrophils, myeloid dendritic cells, and regulatory T cells [1]. TLR8 induces cytokine production in response to specific ligands, contributing to the production of inflammatory cytokines in conditions like rheumatoid arthritis and systemic sclerosis [2]. Additionally, TLR8 has been shown to inhibit the activation of TLR7 and TLR9, highlighting its regulatory functions within the immune response [3].

Studies have demonstrated that TLR8 is a sensor for bacterial RNA in human monocytes, particularly in response to Gram-positive bacteria like Streptococcus pyogenes, Staphylococcus aureus, and Streptococcus pneumonia [4][5]. Furthermore, TLR8 activation has been linked to the early detection of bacteria, induction of inflammation, and recruitment of leukocytes to sites of infection [6]. The importance of TLR8 in recognizing pathogens is further emphasized by its ability to enhance the protective efficacy of immunization against infections like Mycobacterium tuberculosis [7]. TLR8 has also been associated with epigenomic remodeling and inflammatory response regulation through signaling pathways involving TBK1-IRF5 [2].

References:
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[2] Y. Liu, M. Bachu, C. Brauner, R. Yuan, Y. Du, M. Kioonet al., Costimulation of tlr8 responses by cxcl4 in human monocytes mediated by tbk1-irf5 signaling and epigenomic remodeling, The Journal of Immunology, vol. 208, no. 1_Supplement, p. 111.01-111.01, 2022. https://doi.org/10.4049/jimmunol.208.supp.111.01
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[6] B. Ehrnström, J. Kojen, M. Giambelluca, L. Ryan, S. Moen, Z. Huet al., Tlr8 and complement c5 induce cytokine release and thrombin activation in human whole blood challenged with gram-positive bacteria, Journal of Leukocyte Biology, vol. 107, no. 4, p. 673-683, 2020. https://doi.org/10.1002/jlb.3a0120-114r
[7] J. Tang, M. Sun, G. Shi, Y. Xu, Y. Han, X. Liet al., Toll-like receptor 8 agonist strengthens the protective efficacy of esat-6 immunization to mycobacterium tuberculosis infection, Frontiers in Immunology, vol. 8, 2018. https://doi.org/10.3389/fimmu.2017.01972

**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.