

Recombinant Human TLR4 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50973

Size: 10ug, 100ug

Protein Name: Toll-like receptor 4 (hToll) (CD antigen CD284)

Synonym: TLR4

UniProt ID: O00206

UniProt Link: www.uniprot.org/uniprotkb/O00206/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 839 AA

Molecular Weight: 96 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MMSASRLAGTLIPAMAFSLSCVRPESWEPCVEVVPNITYQCMELNFYKIPDNLFPSTKNLDLSFNPLR
HLGSYSFFSFPELQVLDLSRCEIQTIEDGAYQSLSHLSTLILTGNPIQSLALGAFSGLSSLQKLAVAVETN
LASLENFPIGHLKTLKELNVAHNLIQSFKLPEYFSNLTNLEHLDLSSNKIQSIYCTDLRVLHQMPLLNLS
LDLSLNP MNFIQPGAFKEIRLHKLT LRNNFDSL NV MKTCIQGLAGLEVHRLVLGEFRNEGNLEKFDKS
ALEGLCNLTIEEFRLAYLDYYLDDIIDLFNCLTNVSSFSLVSVTIERVKDFSYNFGWQHLELVNCKFGQ
FPTLKLKSLKRLTFTSNKGGNAFSEVDLPSLEFLDLSRNGLSFKGCCSQSDFGTTS LKYLDLSFNGVI
TMSSNFLGLEQLEHLDFQHSNLKQMSEFSVFLSLRNLIYLDISHTHTRVAFNGIFNGLSSLEVLKMAG
NSFQENFLPDIFTELRLNTFLDLSQCQLEQLSPTAFNSLSSLQVLNMSHNNFFSLDTFPYKCLNSLQV
LDYSLNHIMTSKKQELQHFPSSLAFLNLTQNDFACTCEHQSFQWIKDQRQLLVEVERMECATPSDK
QGMPVLSLNITCQMNKTIIGVSVLSVLVSVVAVLVYKFYFHLMLLAGCIKYGRGENIYDAFVIYSSQD
EDWVRNELVKNLEEGVPPFQLCLHYRDFIPGVAIAANIIHEGFHKSRKVIVVVSQHFQSRWCIFEYEI
AQTWQFLSSRAGIIFIVLQKVEKTLLRQQVELYRLLSRNTYLEWEDSVLGRHIFWRRLRKALLDGKSW
NPEGTVGTGCNWQEATSI

3. Buffer Composition



Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Toll-like receptor 4 (hToll) (CD antigen CD284) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Transmembrane receptor that functions as a pattern recognition receptor recognizing pathogen- and damage-associated molecular patterns (PAMPs and DAMPs) to induce innate immune responses via downstream signaling pathways (PubMed:10835634, PubMed:15809303, PubMed:16622205, PubMed:17292937, PubMed:17478729, PubMed:20037584, PubMed:20711192, PubMed:23880187, PubMed:27022195, PubMed:29038465, PubMed:17803912, PubMed:15852007). At the plasma membrane, cooperates with LY96 to mediate the innate immune response to bacterial lipopolysaccharide (LPS) (PubMed:27022195). Also involved in LPS-independent inflammatory responses triggered by free fatty acids, such as palmitate, and Ni(2+) (PubMed:20711192). Mechanistically, acts via MYD88, TIRAP and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response (PubMed:10835634, PubMed:21393102, PubMed:27022195, PubMed:36945827, PubMed:9237759). Alternatively, CD14-mediated TLR4 internalization via endocytosis is associated with the initiation of a MYD88-independent signaling via the TICAM1-TBK1-IRF3 axis leading to type I interferon production (PubMed:14517278). In addition to the secretion of proinflammatory cytokines, initiates the activation of NLRP3 inflammasome and formation of a positive feedback loop between autophagy and NF-kappa-B signaling cascade (PubMed:32894580). In complex with TLR6, promotes inflammation in monocytes/macrophages by associating with TLR6 and the receptor CD86 (PubMed:23880187). Upon ligand binding, such as oxLDL or amyloid-beta 42, the TLR4:TLR6 complex is internalized and triggers inflammatory response, leading to NF-kappa-B-dependent production of CXCL1, CXCL2 and CCL9 cytokines, via MYD88 signaling pathway, and CCL5 cytokine, via TICAM1 signaling pathway (PubMed:23880187). In myeloid dendritic cells, vesicular stomatitis virus glycoprotein G but not LPS promotes the activation of IRF7, leading to type I IFN production in a CD14-dependent manner (PubMed:15265881, PubMed:23880187). Required for the migration-promoting effects of ZG16B/PAUF on pancreatic cancer cells.

Subcellular Localization: Cell membrane ; Single-pass type I membrane protein . Early endosome . Cell projection, ruffle . Note=Upon complex formation with CD36 and TLR6, internalized through dynamin-dependent endocytosis (PubMed:20037584). Colocalizes with RFTN1 at cell membrane and then together with RFTN1 moves to endosomes, upon lipopolysaccharide stimulation. Co-localizes with ZG16B/PAUF at the cell membrane of pancreatic cancer cells (PubMed:36232715).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.



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- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.