

Recombinant Rat TLR4 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52587

Size: 10ug, 100ug

Protein Name: Toll-like receptor 4 (Toll4) (CD antigen CD284)

Synonym: Tlr4

UniProt ID: Q9QX05

UniProt Link: www.uniprot.org/uniprotkb/Q9QX05/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 835 AA

Molecular Weight: 96 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MMPLLHLAGTLIMALFLSCLRPGSLNPCIEVLPNITYQCMDQNLSKIPHDIPYSTKNLDLSFNPLKILRS
YSFTNFSQLQWLDLSRCEIETIEDKAWHGLNQLSTLVLTGNPIKSFSPGSFSGLTNLENLVAVETKMT
SLEGFHIGQLISLKKLNVAHNLIHSFKLPEYFSNLTNLEHVDLSYNYIQTISVKDLQFLREN PQVNLSLD
LSLNPIDSIQAQAFQGIRLHELTLRSNFNSSNVLMCLQNMTGLHVHRLILGEFKNERNLESFDRSVM
EGLCNVSIDEFRLTYINHFSDDIYNLNCLANISAMSFTGVHIKHIADVPRHFKWQSLSIIRCHLKPF PKL
SLPFLKSWTLTTNREDISFGQLALPSRLRYDLRSNAMSFRGCCSYSDFGTNNLKYLDLSFNGVILMSA
NFMGLEEELEYLDFQHSTLKKVTEFSVFLSLEKLLYLDISYTNTKIDFDGIFLGLISLNTLKMAGNSFKDN
TLSNVFTNTTNLTFLDLSCQLEQISRGVFDTLRLQLLNMSHNNLLFLDPSHYKQLYSLRTLDCSFN
RIETSKGILQHFPKSLAVFNLTNNSVACICEYQNFLQWVKDQKMFLVNVEQMKCASPIDMKASLVLDL
TNSTCYIYKTIISVSVSVLVVATVAFLIYHFYFHLILIA GCKKYSRGESIYDAFVIYSSQNEDWVRNELV
KNLEEGVPRFQLCLHYRDFIPGVAIAANIIQEGFHKS RKVIVVSRHF IQSRWCIFEY EIAQTWQFLSS
RSGIIFIVLEKVEKSLLRQQVELYRLLSRNTYLEWEDNALGRHIFWRRLKKALLDGKALNPDETSEEE
QEATTLT

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 (Toll4) (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. At the plasma membrane, cooperates with LY96 to mediate the innate immune response to bacterial lipopolysaccharide (LPS). Also involved in LPS-independent inflammatory responses triggered by free fatty acids, such as palmitate, and Ni(2+). Mechanistically, acts via MYD88, TIRAP and TRAF6, leading to NF-kappa-B activation, cytokine secretion and the inflammatory response. 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. 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. In complex with TLR6, promotes inflammation in monocytes/macrophages by associating with TLR6 and the receptor CD86. 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. 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.

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. Colocalizes with RFTN1 at cell membrane and then together with RFTN1 moves to endosomes, upon lipopolysaccharide stimulation.

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