

Recombinant Human TLR7 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50976

Size: 10ug, 100ug

Protein Name: Toll-like receptor 7

Synonym: TLR7, UNQ248/PRO285

UniProt ID: Q9NYK1

UniProt Link: www.uniprot.org/uniprotkb/Q9NYK1/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 1049 AA

Molecular Weight: 121 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MVFPMWTLKRQILILFNIILISKLLGARWFPKTLPCDVTLDVPKNHVIVDCTDKHLTEIPGGIPTNTTNTLT
LTINHIPDISPASFHRLDHLVEIDFRCNCVPIPLGSKNNMCIKRLQIKPRSFSGLTYLKSLYLDGNQLLEI
PQGLPPSLQLLSLEANNIFSIRKENLTELANIEILYLGQNCYRNPCYVSYSIEKDAFLNLTCLKVLSLK
DNNVTAVPTVLPSTLTELYLYNNMIAKIQEDDFNNLNQLQILDLSGNCPRCYNAPFPCAPCKNNSPLQ
IPVNAFDALTELKVLRLHSNSLQHVPFRWFKNINKLQELDLSQNFLAKEIGDAKFLHFLPSLIQLDLFS
NFELQVYRASMNLSQAFSSLKSLKILRIRGYVFKELKSFNLSPLHNLQNLEVLDTGTNFIKIANLSMFK
QFKRLKVIDLSVNKISPSGDSSEVGFCNARTSVESYEPQVLEQLHYFRYDKYARSCRFRKNKEASFM
SVNESCYKYGQTLDSLKNSIFFVKSSDFQHLSFLKCLNLSGNLISQTLNGSEFQPLAELRYLDFSNNR
LDLLHSTAFEELHKLEVLDISSNSHYFQSEGITHMLNFTKNLKVQLKMMNDNDISSSTSRTMESESL
RTLEFRGNHLDVLWREGDNRYLQLFKNLLKLEELDISKNLSFLPSGVFDGMPPNKNLSLAKNGLK
SFSWKKLQCLKNLETDLSHNQLTTVPERLSNCSRSLKNLILKNNQIRSLTKYFLQDAFQLRYLDLSS
NKIQMIQKTSFPENVLNNLKMILLHHNRFLCTCDAVWFVWWVNHTTEVTIPYLATDVTGPGAHKG
QSVISLDLYTCELDLTNLILFSLISVSLFLMVMMTASHLYFWDVWYIYHFCKAKIKGYQRLISPDCCY
DAFIVYDTKDPAVTEWVLAELVAKLEDPREKHFNLCEERDWLPGQPVLENLSQSIQLSKKTVMFVMT
DKYAKTENFKIAFYLSHQRLMDEKVDVILIFLEKPFQKSKFLQLRKRLCGSSVLEWPTNPQAHYPFW
QCLKNALATDNHVAYSQVFKETV

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 7 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: Endosomal receptor that plays a key role in innate and adaptive immunity (PubMed:14976261, PubMed:32433612). Controls host immune response against pathogens through recognition of uridine-containing single strand RNAs (ssRNAs) of viral origin or guanosine analogs (PubMed:12738885, PubMed:27742543, PubMed:31608988, PubMed:32706371, PubMed:35477763). Upon binding to agonists, undergoes dimerization that brings TIR domains from the two molecules into direct contact, leading to the recruitment of TIR-containing downstream adapter MYD88 through homotypic interaction (PubMed:27742543). In turn, the Myddosome signaling complex is formed involving IRAK4, IRAK1, TRAF6, TRAF3 leading to activation of downstream transcription factors NF-kappa-B and IRF7 to induce pro-inflammatory cytokines and interferons, respectively (PubMed:27742543, PubMed:32706371). In plasmacytoid dendritic cells, RNASET2 endonuclease cooperates with PLD3 or PLD4 5'→3' exonucleases to process RNA and release 2',3'-cyclic guanosine monophosphate (2',3'-cGMP) and cytidine-rich RNA fragments that occupy TLR7 ligand-binding pockets and trigger a signaling-competent state.

Subcellular Localization: Endoplasmic reticulum membrane ; Single-pass type I membrane protein . Endosome . Lysosome . Cytoplasmic vesicle, phagosome . Note=Relocalizes from endoplasmic reticulum to endosome and lysosome upon stimulation with agonist.

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.