

Recombinant Mouse RIGI Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51691

Size: 10ug, 100ug

Protein Name: Antiviral innate immune response receptor RIG-I (ATP-dependent RNA helicase DDX58) (EC 3.6.4.13) (DEAD box protein 58) (RIG-I-like receptor 1) (RLR-1) (RNA sensor RIG-I) (Retinoic acid-inducible gene 1 protein) (RIG-1) (Retinoic acid-inducible gene 1 protein) (RIG-I)

Synonym: Rigi, Ddx58

UniProt ID: Q6Q899

UniProt Link: www.uniprot.org/uniprotkb/Q6Q899/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 926 AA

Molecular Weight: 106 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MTAEQRQNLQAFRDYIKKILDPTYILSYMSSWLEDEEVQYIQA EKNNKGPMEEAASLFLQYLLKLQSEG
WFQAFDLALYHAGYCGLC EAIESWDFQKIEKLEEHRLRLRLEPEFKATVDPNDILSELSECLINQEC
EEIRQIRDTKGRMAGAEKMAECLIRSDKENWPKVLQLALEKDNSKFSELWIVDKGFKRAESKADEDD
GAEASSIQIFIQEEPECQNLSQNP GPPSEASSNNLHSP LKPRNYQLELALPAKKGKNTIICAPTGCGK
TFVSLICEHHLKKFPCGQKGKV VFFANQIPVYEQQATVFSRYFERLGYNIASISGATSDSVSVQHIIIE
DNDIIILTPQILVNNLNNGAIPSLSVFTLMIFDECHNTSKNH PYNQIMFRYLDHKLGESRDPLPQVVGLT
ASVGVGDAKTAEEAMQHICKLCAALDASVIATVRDNVAELEQVVYKPQKISRKVASRTSNTFKCIISQ
LMKETEKLA KDVSEELGKLFQIQNREFGTQKYEQWIVGVH KACSVFQMADKEEESRVCKALFLYTS
HLRKYNDALIISED AQMTDALNYLKAFFHDVREAAFDETERELTRRFE EKLEELEKVSRDPSNENPKL
RDLYLV LQEEYHLKPETKTILFVKTRALVDALKKWI EENPALSFLKPGILTGRGRTRN RATGMTLPAQK
CVLEAFRASGDNNILIATSV ADEGIDIAECNLVILY EYVGNVIKMIQTRGRGRARDSKCFLLTSSADVIE
KEKANMIKEKIMNESILRLQTWDEM KFGKTVHRIQVNEKLLRDSQHKPQPVPD KENKLLCGKCKNF
ACYTADIRVVETSHYTVLGD AFKERFVCKPHPKPKIYDNFEKKAKIFCAKQNC SHDWGIFVRYKTFEI
PVIKIESFVVEDIVSGVQNRH SKWKDFHFERIQFDPAEMSV

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 Antiviral innate immune response receptor RIG-I (ATP-dependent RNA helicase DDX58) (EC 3.6.4.13) (DEAD box protein 58) (RIG-I-like receptor 1) (RLR-1) (RNA sensor RIG-I) (Retinoic acid-inducible gene 1 protein) (RIG-1) (Retinoic acid-inducible gene I protein) (RIG-I) 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: Innate immune receptor that senses cytoplasmic viral nucleic acids and activates a downstream signaling cascade leading to the production of type I interferons and pro-inflammatory cytokines. Forms a ribonucleoprotein complex with viral RNAs on which it homooligomerizes to form filaments. The homooligomerization allows the recruitment of RNF135 an E3 ubiquitin-protein ligase that activates and amplifies the RIG-I-mediated antiviral signaling in an RNA length-dependent manner through ubiquitination-dependent and -independent mechanisms. Upon activation, associates with mitochondria antiviral signaling protein (MAVS/IPS1) that activates the IKK-related kinases TBK1 and IKKε which in turn phosphorylate the interferon regulatory factors IRF3 and IRF7, activating transcription of antiviral immunological genes including the IFN-α and IFN-β interferons. Ligands include: 5'-triphosphorylated ssRNA and dsRNA and short dsRNA (<1 kb in length). In addition to the 5'-triphosphate moiety, blunt-end base pairing at the 5'-end of the RNA is very essential. Overhangs at the non-triphosphorylated end of the dsRNA RNA have no major impact on its activity. A 3' overhang at the 5' triphosphate end decreases and any 5' overhang at the 5' triphosphate end abolishes its activity. Detects both positive and negative strand RNA viruses including members of the families Paramyxoviridae: Sendai virus (SeV), Rhabdoviridae and Flaviviridae. It also detects rotavirus and orthoreovirus. Also involved in antiviral signaling in response to viruses containing a dsDNA genome. Detects dsRNA produced from non-self dsDNA by RNA polymerase III. May play important roles in granulocyte production and differentiation, bacterial phagocytosis and in the regulation of cell migration.

Subcellular Localization: Cytoplasm . Cell projection, ruffle membrane . Cytoplasm, cytoskeleton . Cell junction, tight junction . Note=Colocalized with TRIM25 at cytoplasmic perinuclear bodies. Associated with the actin cytoskeleton at membrane ruffles.

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.