

Recombinant Human GBP7 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50359

Size: 10ug, 100ug

Protein Name: Guanylate-binding protein 7 (EC 3.6.1.-) (EC 3.6.5.-) (GTP-binding protein 7) (GBP-7) (Guanine nucleotide-binding protein 7) (Guanylate-binding protein 4-like)

Synonym: GBP7, GBP4L

UniProt ID: Q8N8V2

UniProt Link: www.uniprot.org/uniprotkb/Q8N8V2/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 638 AA

Molecular Weight: 73 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MASEIHMPGPVCLTENTKGHLVVNSEALEILSAITQPVVVVAIVGLYRTGKSYLMNKLAKGNKGFPLG
CTVKSETKGIWMWCVPHPSKPNHTLILLDTEGLGDMEKSDPKSDSWIFALAVLLSSSFVYNSMGTIN
HQALEQLHYVTELTTELIRAKSCPRPDEVEDSSEFVSFFPDFIWTVRDFTLELKLDGHPITEDEYLENAL
KLISGKNPQIQNSNKPREWIRHFFPKQKCFVDRPINDKLLHVEEVREDQLDSNFQMSENFCSYI
FTHAKTKTLREGILVTGNRLGMLVETYLDAINSGATPCLENAMAVLAQCENSAAVQRAANHYSQQM
AQQVRFPDRTLQELLDVHAVCEREIAVFMESFKDKSQEFQKKLVDTMEKKKEDFVLQNEEASAK
YCQAEKRLSELLTESISRGTFVPGGHNIYLEAKKKIEQDYTLVPRKGVKADEVLSFLQSQVVEES
ILQSDKALTAGEKAIKAKKEAAEKEQELLRQKQKEQQQMMEAQERSFQENIAQLKKKMERERE
NYMRELRLKMLSHKMKVLEELLTEGFKEIFESLNEEINRLKEQIEAAENEPSVFSQILDVAGSIFIAALP
GAAKLVDLGMKILSSLCNRLRNPGKKIIS

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 Guanylate-binding protein 7 (EC 3.6.1.-) (EC 3.6.5.-) (GTP-binding protein 7) (GBP-7) (Guanine nucleotide-binding protein 7) (Guanylate-binding protein 4-like) 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: Interferon (IFN)-inducible GTPase that plays important roles in innate immunity against a diverse range of bacterial, viral and protozoan pathogens (By similarity). Hydrolyzes GTP to GMP in two consecutive cleavage reactions and predominantly uses GTP and not GDP or GMP as the substrate (By similarity). Following infection, recruited to the pathogen-containing vacuoles or vacuole-escaped bacteria and acts as a positive regulator of inflammasome assembly by promoting the release of inflammasome ligands from bacteria (By similarity). Acts by promoting lysis of pathogen-containing vacuoles, releasing pathogens into the cytosol (By similarity). Following pathogen release in the cytosol, promotes recruitment of proteins that mediate bacterial cytolysis: this liberates ligands that are detected by inflammasomes, such as lipopolysaccharide (LPS) that activates the non-canonical CASP4/CASP11 inflammasome or double-stranded DNA (dsDNA) that activates the AIM2 inflammasome (By similarity). Also promotes IFN-gamma-mediated host defense against bacterial infections by regulating oxidative responses and bacteriolytic peptide generation (By similarity). May help to assemble NADPH oxidase on phagosomal membranes by acting as a bridging protein between NADPH oxidase cytosolic subunits NCF2-NCF4 and the membrane subunits CYBA-CYBB (By similarity). Participates along with GBP1 in trafficking monoubiquitinated protein cargo to autolysosomes for generating ubiquitin-derived antimicrobial peptides (By similarity). Facilitates influenza A virus replication by inhibiting the activation of NF-kappaB and JAK-STAT signaling pathways and the expression of type I, type III interferons and pro-inflammatory cytokines (PubMed:33408175). Confers protection to several pathogens, including the bacterial pathogens *Listeria monocytogenes* and *Mycobacterium bovis* BCG as well as the protozoan pathogen *Toxoplasma gondii* (By similarity). Required for disruption of the parasitophorous vacuole formed following *T.gondii* infection and subsequent killing of the parasite (By similarity).

Subcellular Localization: Cytoplasmic vesicle membrane .

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.