

Recombinant Mouse TTP Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51329

Size: 10ug, 100ug

Protein Name: mRNA decay activator protein ZFP36 (Growth factor-inducible nuclear protein NUP475) (TPA-induced sequence 11) (Tristetraprolin) (Zinc finger protein 36) (Zfp-36)

Synonym: Zfp36, Nup475, Tis11, Tis11a, Ttp

UniProt ID: P22893

UniProt Link: www.uniprot.org/uniprotkb/P22893/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 319 AA

Molecular Weight: 34 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDLSAIYESLQSMHDLSSDHGGTESLGGLWNINSDSIPSGVTSRLTGRSTSLVEGRSCGWVPPPP
GFAPLAPRPGPELSPSPTSPTATPTTSSRYKTELCRTYSESGRCRYGAKCQFAHGLGELRQANRHP
KYKTELCCHKFYLGRCOPYGSRCHFIHNPTEDLALPGQPHVLRQSFGLPSGRRSSPPPPGFSGPS
LSSCSFSPSSSPPPPGDLPLSPSAFSAAPGTPVTRDPNQACCPSRRSTTPSTIWGPLGGLARSP
SAHSLGSDPDDYASSGSSLGGSDSPVFEAGVFGPPQTPAPRRRLPIFNRI SVSE

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 mRNA decay activator protein ZFP36 (Growth factor-inducible nuclear protein NUP475) (TPA-induced sequence 11) (Tristetraprolin) (Zinc finger protein 36) (Zfp-36) 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: Zinc-finger RNA-binding protein that destabilizes numerous cytoplasmic AU-rich element (ARE)-containing mRNA transcripts by promoting their poly(A) tail removal or deadenylation, and hence provide a mechanism for attenuating protein synthesis (PubMed:10330172, PubMed:10706852, PubMed:10805719, PubMed:15014438, PubMed:15187092, PubMed:15634918, PubMed:17030620, PubMed:19188452, PubMed:20595389, PubMed:21078877, PubMed:22701344, PubMed:27193233). Acts as an 3'-untranslated region (UTR) ARE mRNA-binding adapter protein to communicate signaling events to the mRNA decay machinery (PubMed:21278420). Recruits deadenylase CNOT7 (and probably the CCR4-NOT complex) via association with CNOT1, and hence promotes ARE-mediated mRNA deadenylation (PubMed:21278420). Also functions by recruiting components of the cytoplasmic RNA decay machinery to the bound ARE-containing mRNAs (PubMed:21278420). Self-regulates by destabilizing its own mRNA (PubMed:15187092, PubMed:17288565). Binds to 3'-UTR ARE of numerous mRNAs and of its own mRNA (PubMed:11533235, PubMed:15187092, PubMed:16508014, PubMed:17288565, PubMed:17971298, PubMed:20595389, PubMed:21078877, PubMed:21278420, PubMed:22701344, PubMed:27193233). Plays a role in anti-inflammatory responses; suppresses tumor necrosis factor (TNF)-alpha production by stimulating ARE-mediated TNF mRNA decay and several other inflammatory ARE-containing mRNAs in interferon (IFN)- and/or lipopolysaccharide (LPS)-induced macrophages (PubMed:15014438, PubMed:16514065, PubMed:8630730, PubMed:9703499). Also plays a role in the regulation of dendritic cell maturation at the post-transcriptional level, and hence operates as part of a negative feedback loop to limit the inflammatory response (By similarity). Promotes ARE-mediated mRNA decay of hypoxia-inducible factor HIF1A mRNA during the response of endothelial cells to hypoxia (By similarity). Positively regulates early adipogenesis of preadipocytes by promoting ARE-mediated mRNA decay of immediate early genes (IEGs) (PubMed:22701344). Negatively regulates hematopoietic/erythroid cell differentiation by promoting ARE-mediated mRNA decay of the transcription factor STAT5B mRNA (By similarity). Plays a role in maintaining skeletal muscle satellite cell quiescence by promoting ARE-mediated mRNA decay of the myogenic determination factor MYOD1 mRNA (PubMed:25815583). Also associates with and regulates the expression of non-ARE-containing target mRNAs at the post-transcriptional level, such as MHC class I mRNAs (By similarity). Participates in association with argonaute RISC catalytic components in the ARE-mediated mRNA decay mechanism; assists microRNA (miRNA) targeting ARE-containing mRNAs (By similarity). May also play a role in the regulation of cytoplasmic mRNA decapping; enhances decapping of ARE-containing RNAs, in vitro (By similarity). Involved in the delivery of target ARE-mRNAs to processing bodies (PBs) (By similarity). In addition to its cytosolic mRNA-decay function, affects nuclear pre-mRNA processing (PubMed:22844456). Negatively regulates nuclear poly(A)-binding protein PABPN1-stimulated polyadenylation activity on ARE-containing pre-mRNA during LPS-stimulated macrophages (PubMed:22844456). Also involved in the regulation of stress granule (SG) and P-body (PB) formation and fusion (PubMed:15967811). Plays a role in the regulation of keratinocyte proliferation, differentiation and apoptosis (By similarity). Plays a role as a tumor suppressor by inhibiting cell proliferation in breast cancer cells (By similarity).

Subcellular Localization: Nucleus . Cytoplasm . Cytoplasmic granule . Cytoplasm, P-body .

Note=Shuttles between nucleus and cytoplasm in a CRM1-dependent manner (PubMed:11796723, PubMed:11886850). Localized predominantly in the cytoplasm in a p38 MAPK- and YWHAB-dependent manner (PubMed:11886850, PubMed:16508015). Colocalizes with SH3KBP1 and

MAP3K4 in the cytoplasm (By similarity). Component of cytoplasmic stress granules (SGs) (PubMed:15967811). Localizes to cytoplasmic stress granules upon energy starvation (PubMed:15014438). Localizes in processing bodies (PBs) (By similarity). Excluded from stress granules in a phosphorylation MAPKAPK2-dependent manner (PubMed:15014438). Shuttles in and out of both cytoplasmic P-body and SGs (PubMed:15967811).

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.