

Recombinant Mouse TIA1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51467

Size: 10ug, 100ug

Protein Name: Cytotoxic granule associated RNA binding protein TIA1 (Nucleolysin TIA-1) (RNA-binding protein TIA-1) (T-cell-restricted intracellular antigen-1) (TIA-1)

Synonym: Tia1, Tia

UniProt ID: P52912

UniProt Link: www.uniprot.org/uniprotkb/P52912/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 386 AA

Molecular Weight: 43 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MEDEMPKTLVGNLSRDVTEALILQLFSQIGPCKNCKMIMDTAGNDPYCFVEFHEHRHAAAALAAMN
GRKIMGKEVKVNWATTPSSQKKDTSSSTVVSTQRSQDHFHVFGDLSPEITTEDIKAAFAPFGRISD
ARVVKDMATGKSKGYGFVSFFNKWDAENAIQQMGGQWLGGGRQIRTNWATRKPPAPKSTYESNTK
QLSYDEVVSQSSPNNCTVYCGGVTSGLTEQLMRQTFSPFGQIMEIRVFPDKGYSFVRFSSESAAH
AIVSVNGTTIEGHVVKCYWGKETLDMINPVQQNQIGYPPTYGQWGQWYGNAQQIGQYVPNGWQ
VPAYGVYGPWSQQGFNQTSAPWMGPNYSVPPPQGQNGSMLPSQPAGYRVAGYETQ

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 Cytotoxic granule associated RNA binding protein TIA1 (Nucleolysin TIA-1) (RNA-binding protein TIA-1) (T-cell-restricted intracellular antigen-1) (TIA-1) 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: RNA-binding protein involved in the regulation of alternative pre-RNA splicing and mRNA translation by binding to uridine-rich (U-rich) RNA sequences (PubMed:10938105, PubMed:16227602). Binds to U-rich sequences immediately downstream from a 5' splice sites in a uridine-rich small nuclear ribonucleoprotein (U snRNP)-dependent fashion, thereby modulating alternative pre-RNA splicing (PubMed:10938105). Preferably binds to the U-rich IAS1 sequence in a U1 snRNP-dependent manner; this binding is optimal if a 5' splice site is adjacent to IAS1 (PubMed:10938105). Activates the use of heterologous 5' splice sites; the activation depends on the intron sequence downstream from the 5' splice site, with a preference for a downstream U-rich sequence (PubMed:10938105). By interacting with SNRPC/U1-C, promotes recruitment and binding of spliceosomal U1 snRNP to 5' splice sites followed by U-rich sequences, thereby facilitating atypical 5' splice site recognition by U1 snRNP (By similarity). Activates splicing of alternative exons with weak 5' splice sites followed by a U-rich stretch on its own pre-mRNA and on TIAR mRNA (PubMed:11514562). Acts as a modulator of alternative splicing for the apoptotic FAS receptor, thereby promoting apoptosis (By similarity). Binds to the 5' splice site region of FAS intron 5 to promote accumulation of transcripts that include exon 6 at the expense of transcripts in which exon 6 is skipped, thereby leading to the transcription of a membrane-bound apoptotic FAS receptor, which promotes apoptosis (By similarity). Binds to a conserved AU-rich cis element in COL2A1 intron 2 and modulates alternative splicing of COL2A1 exon 2 (By similarity). Also binds to the equivalent AT-rich element in COL2A1 genomic DNA, and may thereby be involved in the regulation of transcription (By similarity). Involved in the repression of mRNA translation by binding to AU-rich elements (AREs) located in mRNA 3' untranslated regions (3' UTRs), including target ARE-bearing mRNAs encoding TNF and PTGS2 (PubMed:10921895, PubMed:16227602). Also participates in the cellular response to environmental stress, by acting downstream of the stress-induced phosphorylation of EIF2S1/EIF2A to promote the recruitment of untranslated mRNAs to cytoplasmic stress granules (SGs), leading to stress-induced translational arrest (By similarity). Formation and recruitment to SGs is regulated by Zn(2+) (PubMed:29298433). Possesses nucleolytic activity against cytotoxic lymphocyte target cells (By similarity).

Subcellular Localization: Nucleus . Cytoplasm . Cytoplasm, Stress granule . Note=Accumulates in cytoplasmic stress granules (SG) following cellular damage (PubMed:29298433). Recruitment to SG is induced by Zn(2+) (PubMed:29298433).

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.