10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TIA1 Antibody

Rabbit mAb
Catalog # AP91226

Product Information

Application	WB, IHC, IF, ICC, IP, IHF
Primary Accession	P31483
Reactivity	Human, Mouse
Clonality	Monoclonal
Other Names	Nucleolysin TIA 1 isoform p40; p40 TIA 1; TIA1 protein; TIAL1; TIAR;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	42963

Additional Information

Dilution	WB 1:500~1:2000 IHC 1:50~1:200 ICC/IF 1:50~1:200 IP 1:50
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human TIA1
Description	Involved in alternative pre-RNA splicing and regulation of mRNA translation by binding to AU-rich elements (AREs) located in mRNA 3' untranslated regions (3' UTRs). Possesses nucleolytic activity against cytotoxic lymphocyte target cells. May be involved in apoptosis.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	TIA1
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:11106748, PubMed:12486009, PubMed:17488725, PubMed:8576255). 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:11106748, PubMed:8576255). 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 (By similarity). 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:11106748). 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 (PubMed:11106748, PubMed:12486009, PubMed:17488725). 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 (By similarity). Acts as a modulator of alternative splicing for the apoptotic FAS receptor, thereby promoting apoptosis (PubMed:11106748, PubMed:17488725, PubMed:1934064). 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 (PubMed:11106748, PubMed:17488725, PubMed:1934064). Binds to a conserved AU-rich cis element in COL2A1 intron 2 and modulates alternative splicing of COL2A1 exon 2 (PubMed:17580305). Also binds to the equivalent AT-rich element in COL2A1 genomic DNA, and may thereby be involved in the regulation of transcription (PubMed:17580305). Binds specifically to a polypyrimidine-rich controlling element (PCE) located between the weak 5' splice site and the intronic splicing silencer of CFTR mRNA to promote exon 9 inclusion, thereby antagonizing PTB1 and its role in exon skipping of CFTR exon 9 (PubMed:14966131). 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 (By similarity). 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 (PubMed:10613902). Formation and recruitment to SGs is regulated by Zn(2+) (By similarity). Possesses nucleolytic activity against cytotoxic lymphocyte target cells (PubMed:1934064).

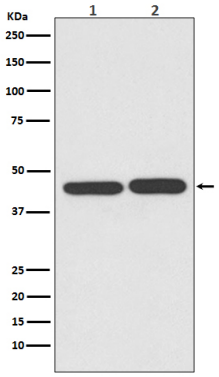
Cellular Location

Nucleus. Cytoplasm Cytoplasm, Stress granule Note=Accumulates in cytoplasmic stress granules (SG) following cellular damage (PubMed:10613902, PubMed:15371533). Recruitment to SG is induced by Zn(2+) (By similarity). {ECO:0000250|UniProtKB:P52912, ECO:0000269|PubMed:10613902, ECO:0000269|PubMed:15371533}

Tissue Location

Expressed in heart, small intestine, kidney, liver, lung, skeletal muscle, testes, pancreas, and ovary (at protein level)

Images



Western blot analysis of TIA1 expression in (1) Jurkat cell lysate; (2) NIH/3T3 cell lysate.

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