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Anti-TIA1 (T-Cell-Restricted Intracellular Antigen-1) Antibody

Mouse Monoclonal Antibody
Catalog # AH13538

Product Information

Application	WB, IF, FC
Primary Accession	P31483
Other Accession	413123
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG2b
Clone Names	TIA1/1313
Calculated MW	42963

Additional Information

Gene ID	7072
Other Names	Cytotoxic granule associated RNA binding protein 1; mTIA-1; Nucleolysin TIA1 isoform p40; p40-TIA-1; RNA binding protein TIA1; T-cell-restricted intracellular antigen-1 (TIA1); TIA-1; TIA1; TIA1 cytotoxic granule associated RNA binding protein; TIAL1; TIAR; WDM
Application Note	Flow Cytometry (0.5-1ug/million cells in 0.1ml); ,Immunofluorescence (1-2ug/ml); ,Western Blotting (1-2ug/ml for 60 minutes at RT);,Optimal dilution for a specific application should be determined.
Format	200ug/ml of Ab purified from rabbit anti-serum by Protein A. Prepared in 10mM PBS with 0.05% BSA & 0.05% azide. Also available WITHOUT BSA at 1.0mg/ml.
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	Anti-TIA1 (T-Cell-Restricted Intracellular Antigen-1) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

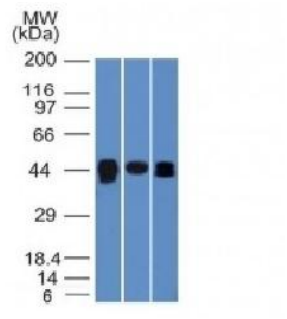
Name	TIA1
Function	RNA-binding protein involved in the regulation of alternative pre-RNA splicing and mRNA translation by binding to uridine-rich (U- rich) RNA sequences (PubMed:11106748, PubMed:12486009, PubMed:17488725, PubMed:8576255). Binds to U-rich sequences immediately downstream from

	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)

Background

TIA-1 (T-cell intracytoplasmic antigen) is a cytoplasmic granule-associated protein, expressed in lymphocytes processing cytolytic potential. TIA-1 is a member of an RNA-binding protein family and possesses nucleolytic activity against cytotoxic lymphocyte (CTL) target cells. It has been suggested that this protein may be involved in the induction of apoptosis as it preferentially recognizes poly(A) homopolymers and induces DNA fragmentation in CTL targets. The major granule-associated species is a 15kDa protein thought to be derived from the carboxyl terminus of the 40kDa product by proteolytic processing. TIA1 antibody labels cytotoxic T cells and natural killer cells (NK cells). It is also expressed in T-cell lymphoma, large granular lymphocyte (LGL) leukemia and hairy cell leukemia. TIA1 expression in T-cell malignancies may help in differentiating LGL leukemia (high expression) from T-cell lymphocytosis and other T-cell diseases (low expression). TIA1 may also be used to label tumor-infiltrating lymphocytes in the study of immune response to malignancies.

Images



Western Blot of HepG2, PC3 and HeLa Cell Lysates with TIA1 Monoclonal Antibody (TIA1/1313).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.