SANTA CRUZ BIOTECHNOLOGY, INC.

TIA-1/TIAR (D-9): sc-48371

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

FAS, also referred to as CD95 or APO-1, is a type I transmembrane protein that plays a central role mediating viral immunity. TIA-1 and TIAR are two closely related proteins that possess three RRMs (RNA recognition motifs), designated RRM 1, 2 and 3. Although both TIA-1 and TIAR are thought to function as mediators of apoptotic cell death, their specific roles in such pathways are unknown. Unlike TIA-1, which is found in the granules of cytotoxic lymphocytes, TIAR expression is limited to the nucleus and found in a much broader range of cells including, but not limited to, cells of hematopoietic origin. TIAR is translocated to the cytoplasm shortly after FAS ligation and this event immediately proceeds the onset of DNA fragmentation. A novel serine/threonine kinase that is activated as a result of FAS ligation, designated FAST (FAS-activated serine/threonine), shows kinase specificity towards both TIA-1 and TIAR. In unstimulated Jurkat cells, FAST resides in the cytoplasm as a highly phosphorylated protein and is quickly dephosphorylated and activated in response to stimulated FAS.

CHROMOSOMAL LOCATION

Genetic locus: TIA1 (human) mapping to 2p13.3, TIAL1 (human) mapping to 10q26.11; Tia1 (mouse) mapping to 6 D1, Tial1 (mouse) mapping to 7 F3.

SOURCE

TIA-1/TIAR (D-9) is a mouse monoclonal antibody raised against amino acids 21-140 of TIA-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TIA-1/TIAR (D-9) is available conjugated to agarose (sc-48371 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-48371 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48371 PE), fluorescein (sc-48371 FITC), Alexa Fluor® 488 (sc-48371 AF488), Alexa Fluor® 546 (sc-48371 AF546), Alexa Fluor® 594 (sc-48371 AF594) or Alexa Fluor® 647 (sc-48371 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-48371 AF680) or Alexa Fluor® 790 (sc-48371 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

TIA-1/TIAR (D-9) is recommended for detection of TIA-1 and TIAR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:2000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of TIA-1: 40 kDa.

Molecular Weight of TIA-1 granule-associated isoform: 15 kDa.

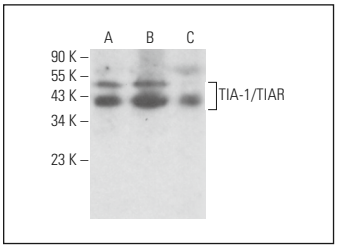
Molecular Weight of TIAR isoforms: 42/50 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, MOLT-4 cell lysate: sc-2233 or BJAB whole cell lysate: sc-2207.

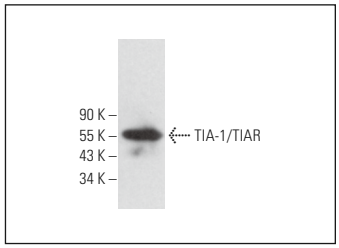
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



TIA-1/TIAR (D-9): sc-48371. Western blot analysis of TIA-1/TIAR expression in K-562 (**A**), MOLT-4 (**B**) and 3T3-L1 (**C**) whole cell lysates.



TIA-1/TIAR (D-9): sc-48371. Western blot analysis of TIA-1/TIAR expression in BJAB whole cell lysate.

SELECT PRODUCT CITATIONS

1. Fujita, K., et al. 2008. Immunohistochemical identification of messenger RNA-related proteins in basophilic inclusions of adult-onset atypical motor neuron disease. Acta Neuropathol. 116: 439-445.
2. Huichalaf, C., et al. 2010. Expansion of CUG RNA repeats causes stress and inhibition of translation in myotonic dystrophy 1 (DM1) cells. FASEB J. 24: 3706-3719.
3. Abramowski, D., et al. 2012. Transgenic expression of intraneuronal Aβ42 but not Aβ40 leads to cellular Aβ lesions, degeneration, and functional impairment without typical Alzheimer's disease pathology. J. Neurosci. 32: 1273-1283.
4. Ng, C.S., et al. 2013. EMCV disrupts stress granules, the critical platform for triggering antiviral innate immune responses. J. Virol. 87: 9511-9522.
5. Tessier, S.N., et al. 2014. The involvement of mRNA processing factors TIA-1, TIAR, and PABP-1 during mammalian hibernation. Cell Stress Chaperones 19: 813-825.
6. Hirsch-Reinshagen, V., et al. 2017. Clinical and neuropathological features of ALS/FTD with TIA1 mutations. Acta Neuropathol. Commun. 5: 96.
7. Chiou, N.T., et al. 2018. Selective export into extracellular vesicles and function of tRNA fragments during T cell activation. Cell Rep. 25: 3356-3370.e4.
8. Hutten, S., et al. 2020. Nuclear import receptors directly bind to arginine-rich dipeptide repeat proteins and suppress their pathological interactions. Cell Rep. 33: 108538.
9. Cheng, H.W.A., et al. 2022. Understanding *in vitro* pathways to drug discovery for TDP-43 proteinopathies. Int. J. Mol. Sci. 23: 14769.

RESEARCH USE

For research use only, not for use in diagnostic procedures.