SANTA CRUZ BIOTECHNOLOGY, INC.

TDAG51 (M-20): sc-6142

BACKGROUND

Cytotoxic T lymphocyte (CTL)-mediated cytotoxicity constitutes an important component of specific effector mechanisms in immunosurveillance against virus-infected or -transformed cells. Two mechanisms appear to account for this activity, one of which is the perforin-based process. Independently, a FAS-based mechanism involves the transducing molecule FAS (APO-1) and its ligand (FAS-L). The human FAS (APO-1) protein is a cell surface glycoprotein that belongs to a family of receptors that includes CD40, nerve growth factor receptors and tumor necrosis factor receptors. The FAS antigen is expressed on a broad range of lymphoid cell lines, and is expressed at high levels in T cells subsequent to crosslinking of the T cell receptor (TCR). A previously undescribed protein, TDAG51, restores activation-induced apoptosis in cells that have lost the ability to display Fas in response to activation. Thus, TDAG51 plays a critical role in T cell apoptosis by coupling TCR stimulation to Fas expression.

REFERENCES

1. Henkart, P.A. 1985. Mechanism of lymphocyte-mediated cytotoxicity. Ann. Rev. Immunol. 3: 31-58.
2. Young, J.D.E., et al. 1988. Perforin-dependent and -independent pathways of cytotoxicity mediated by lymphocytes. Immunol. Rev. 103: 161-202.
3. Podack, E.R., et al. 1991. A central role of perforin in cytolysis? Ann. Rev. Immunol. 9: 129-157.
4. Yagita, H., et al. 1992. Role of perforin in lymphocyte-mediated cytolysis. Adv. Immunol. 51: 215-242.
5. Drappa, J., et al. 1993. The Fas protein is expressed at high levels on $CD4^{+}CD8^{+}$ thymocytes and activated mature lymphocytes in normal mice but not in the lupus-prone strain, MRL lpr/lpr. Proc. Natl. Acad. Sci. USA 90: 10340-10344.
6. Hanabuchi, S., et al. 1994. Fas and its ligand in a general mechanism of T-cell-mediated cytotoxicity. Proc. Natl. Acad. Sci. USA 91: 4930-4934.

CHROMOSOMAL LOCATION

Genetic locus: PHLDA1 (human) mapping to 12q21.2; Phlda1 (mouse) mapping to 10 D1.

SOURCE

TDAG51 (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TDAG51 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6142 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

TDAG51 (M-20) is recommended for detection of TDAG51 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

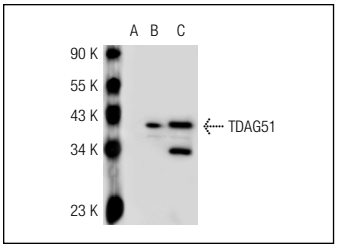
TDAG51 (M-20) is also recommended for detection of TDAG51 in additional species, including porcine.

Suitable for use as control antibody for TDAG51 siRNA (h): sc-36631, TDAG51 siRNA (m): sc-36632, TDAG51 shRNA Plasmid (h): sc-36631-SH, TDAG51 shRNA Plasmid (m): sc-36632-SH, TDAG51 shRNA (h) Lentiviral Particles: sc-36631-V and TDAG51 shRNA (m) Lentiviral Particles: sc-36632-V.

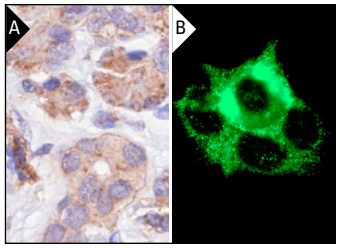
Molecular Weight of TDAG51: 44 kDa.

Positive Controls: mouse brain extract : sc-2253, Hep G2 cell lysate: sc-2227 or TDAG51 (m): 293T Lysate: sc-123964.

DATA



TDAG51 (M-20): sc-6142. Western blot analysis of TDAG51 expression in non-transfected 293T: sc-117752 (**A**), mouse TDAG51 transfected 293T: sc-123964 (**B**) and Hep G2 (**C**) whole cell lysates.



TDAG51 (M-20): sc-6142. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining (**A**). Immunofluorescence staining of methanol-fixed Hep G2 cells showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Hossain, G.S., et al. 2003. TDAG51 is induced by homocysteine, promotes detachment-mediated programmed cell death, and contributes to the cevelopment of atherosclerosis in hyperhomocysteinemia. J. Biol. Chem. 278: 30317-30327.
2. Toyoshima, Y., et al. 2004. TDAG51 mediates the effects of insulin-like growth factor I (IGF-I) on cell survival. J. Biol. Chem. 279: 25898-25904.

RESEARCH USE

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