SANTA CRUZ BIOTECHNOLOGY, INC.

TIGAR (F-5): sc-377065

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

TIGAR (TP53 (tumor protein 53)-induced glycolysis and apoptosis regulator), also known as C12orf5, is a 270 amino acid protein induced by the p53 tumor suppressor pathway that functions to protect against oxidative stress. TIGAR shares sequence similarity with the bisphosphate domain of the fructose-2, 6-bisphosphate degrading enzyme (fructose bisphosphatase or FBPase) of the glycolysis pathway and can thus lower the intracellular levels of fructose-2, 6-bisphosphate. TIGAR specifically functions to block glycolysis, leading the pathway to the pentose phosphate shunt and decreasing the intracellular concentration of reactive oxygen species. This suggests a role for TIGAR in protecting cells from reactive oxygen species that can be DNA damaging and lead to apoptosis.

REFERENCES

1. Schneider, A. and Whitcomb, D.C. 2002. Hereditary pancreatitis: a model for inflammatory diseases of the pancreas. Best Pract. Res. Clin. Gastroenterol. 16: 347-363.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610775. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Jen, K.Y. and Cheung, V.G. 2005. Identification of novel p53 target genes in ionizing radiation response. Cancer Res. 65: 7666-7673.
4. Green, D.R. and Chipuk, J.E. 2006. p53 and metabolism: inside the TIGAR. Cell 126: 30-32.
5. Corcoran, C.A., et al. 2006. The regulation of energy generating metabolic pathways by p53. Cancer Biol. Ther. 5: 1610-1613.
6. Bensaad, K., et al. 2006. TIGAR, a p53-inducible regulator of glycolysis and apoptosis. Cell 126: 107-120.

CHROMOSOMAL LOCATION

Genetic locus: TIGAR (human) mapping to 12p13.32; Tigar (mouse) mapping to 6 F3.

SOURCE

TIGAR (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 81-121 within an internal region of TIGAR of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-377065 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

TIGAR (F-5) is recommended for detection of TIGAR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TIGAR siRNA (h): sc-76662, TIGAR siRNA (m): sc-76663, TIGAR shRNA Plasmid (h): sc-76662-SH, TIGAR shRNA Plasmid (m): sc-76663-SH, TIGAR shRNA (h) Lentiviral Particles: sc-76662-V and TIGAR shRNA (m) Lentiviral Particles: sc-76663-V.

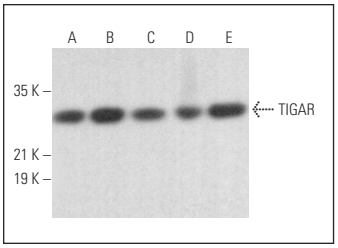
Molecular Weight of TIGAR: 30 kDa.

Positive Controls: U-2 OS cell lysate: sc-2295, Saos-2 cell lysate: sc-2235 or human breast extract: sc-363753.

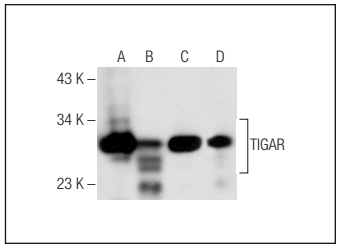
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TIGAR (F-5): sc-377065. Western blot analysis of TIGAR expression in HeLa (**A**), Hep G2 (**B**), KNRK (**C**), MOLT-4 (**D**) and Raji (**E**) whole cell lysates.



TIGAR (F-5): sc-377065. Western blot analysis of TIGAR expression in U-2 OS (**A**), Saos-2 (**B**) and Jurkat (**C**) whole cell lysates and human breast tissue extract (**D**).

SELECT PRODUCT CITATIONS

1. Shi, X.Y., et al. 2016. Downregulation of caveolin-1 upregulates the expression of growth factors and regulators in co-culture of fibroblasts with cancer cells. Mol. Med. Rep. 13: 744-752.
2. Tykhomyrov, A.A., et al. 2020. Plasminogen/plasmin affects expression of glycolysis regulator TIGAR and induces autophagy in lung adenocarcinoma A549 cells. Exp. Oncol. 42: 270-276.

RESEARCH USE

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