SANTA CRUZ BIOTECHNOLOGY, INC.

TIGAR (E-10): sc-166291

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.

CHROMOSOMAL LOCATION

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

SOURCE

TIGAR (E-10) is a mouse monoclonal antibody raised against amino acids 61-269 mapping at the C-terminus of TIGAR of mouse origin.

PRODUCT

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

TIGAR (E-10) is available conjugated to agarose (sc-166291 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166291 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166291 PE), fluorescein (sc-166291 FITC), Alexa Fluor® 488 (sc-166291 AF488), Alexa Fluor® 546 (sc-166291 AF546), Alexa Fluor® 594 (sc-166291 AF594) or Alexa Fluor® 647 (sc-166291 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166291 AF680) or Alexa Fluor® 790 (sc-166291 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

TIGAR (E-10) 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), 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).

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.

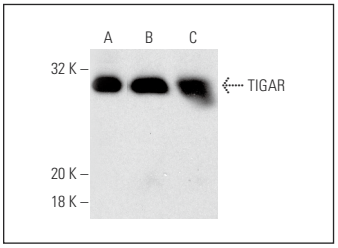
Molecular Weight of TIGAR: 30 kDa.

Positive Controls: Saos-2 cell lysate: sc-2235, Jurkat whole cell lysate: sc-2204 or Hep G2 cell lysate: sc-2227.

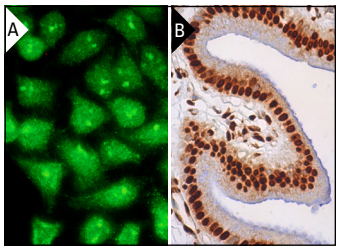
STORAGE

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

DATA



TIGAR (E-10): sc-166291. Western blot analysis of TIGAR expression in Jurkat (**A**), Hep G2 (**B**) and Saos-2 (**C**) whole cell lysates.



TIGAR (E-10): sc-166291. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Gerin, I., et al. 2014. Identification of TP53-induced glycolysis and apoptosis regulator (TIGAR) as the phosphoglycolate-independent 2,3-bisphosphoglycerate phosphatase. Biochem. J. 458: 439-448.
2. Al-Khayal, K., et al. 2016. Identification of the TP53-induced glycolysis and apoptosis regulator in various stages of colorectal cancer patients. Oncol. Rep. 35: 1281-1286.
3. Ko, Y.H., et al. 2016. TP53-inducible glycolysis and apoptosis regulator (TIGAR) metabolically reprograms carcinoma and stromal cells in breast cancer. J. Biol. Chem. 291: 26291-26303.
4. Wang, J., et al. 2016. Reprogramming metabolism by histone methyltransferase NSD2 drives endocrine resistance via coordinated activation of pentose phosphate pathway enzymes. Cancer Lett. 378: 69-79.
5. Ahmad, R., et al. 2017. Targeting MUC1-C inhibits the Akt-S6K1-eIF4A pathway regulating TIGAR translation in colorectal cancer. Mol. Cancer 16: 33.
6. Zhao, Y., et al. 2018. Selective anti-tumor activity of wogonin targeting the Warburg effect through stablizing p53. Pharmacol. Res. 135: 49-59.
7. Xu, H., et al. 2019. LKB1/p53/TIGAR/autophagy-dependent VEGF expression contributes to PM2.5-induced pulmonary inflammatory responses. Sci. Rep. 9: 16600.
8. Liu, X., et al. 2022. Repression of p53 function by SIRT5-mediated desuccinylation at Lysine 120 in response to DNA damage. Cell Death Differ. 29: 722-736.
9. Wang, H., et al. 2022. Nuclear TIGAR mediates an epigenetic and metabolic autoregulatory loop via NRF2 in cancer therapeutic resistance. Acta Pharm. Sin. B 12: 1871-1884.

RESEARCH USE

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