SANTA CRUZ BIOTECHNOLOGY, INC.

GAPDH (8C2): sc-81545

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Glyceraldehyde-3-phosphate dehydrogenase (GAPDH), also called uracil DNA glycosylase, catalyzes the reversible oxidative phosphorylation of glyceraldehyde-3-phosphate in the presence of inorganic phosphate and nicotinamide adenine dinucleotide (NAD), an important energy-yielding step in carbohydrate metabolism. While GAPDH has long been recognized as playing an integral role in glycolysis, additional functions of GAPDH include acting as an uricil DNA glycosylase, activating transcription, binding RNA and involvement in nuclear RNA export, DNA replication and DNA repair. Expression of GAPDH is upregulated in liver, lung and prostate cancers. GAPDH translocates to the nucleus during apoptosis. GAPDH complexes with neuronal proteins implicated in human neurodegenerative disorders including the β-Amyloid precursor, Huntingtin and other triplet repeat neuronal disorder proteins.

REFERENCES

1. Meyer-Siegler, K., et al. 1991. A human nuclear uracil DNA glycosylase is the 37 kDa subunit of GAPDH. Proc. Natl. Acad. Sci. USA 88: 8460-8464.
2. Rondinelli, R.H., et al. 1997. Increased GAPDH gene expression in late pathological stage human prostate cancer. Prostate Cancer Prostatic Dis. 1: 66-72.
3. Sirover, M.A. 1999. New insights into an old protein: the functional diversity of mammalian GAPDH. Biochim. Biophys. Acta 1432: 159-184.

CHROMOSOMAL LOCATION

Genetic locus: GAPDH (human) mapping to 12p13.31.

SOURCE

GAPDH (8C2) is a mouse monoclonal antibody raised against recombinant GAPDH of human origin.

PRODUCT

Each vial contains IgG_1 in 100 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

GAPDH (8C2) is recommended for detection of GAPDH of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

Suitable for use as control antibody for GAPDH siRNA (h): sc-35448, GAPDH shRNA Plasmid (h): sc-35448-SH and GAPDH shRNA (h) Lentiviral Particles: sc-35448-V.

Molecular Weight of GAPDH: 37 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, GAPDH (h3): 293T Lysate: sc-113887 or Hep G2 cell lysate: sc-22274.

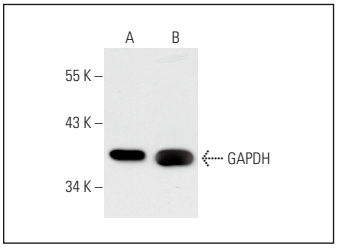
RESEARCH USE

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

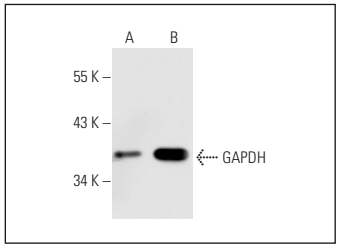
STORAGE

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

DATA



GAPDH (8C2): sc-81545. Western blot analysis of GAPDH expression in 293T (**A**) and Hep G2 (**B**) whole cell lysates.



GAPDH (8C2): sc-81545. Western blot analysis of GAPDH expression in non-transfected: sc-117752 (**A**) and human GAPDH transfected: sc-113887 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Manderfield, L.J., et al. 2009. KCNE4 domains required for inhibition of KCNQ1. J. Physiol. 587: 303-314.
2. Chen, Z., et al. 2014. Role of the stem cell-associated intermediate filament nestin in malignant proliferation of non-small cell lung cancer. PLoS ONE 9: e85584.
3. Huo, W., et al. 2014. MiRNA regulation of TRAIL expression exerts selective cytotoxicity to prostate carcinoma cells. Mol. Cell. Biochem. 388: 123-133.
4. Zhang, W., et al. 2015. SLPI knockdown induced pancreatic ductal adenocarcinoma cells proliferation and invasion. Cancer Cell Int. 15: 37.
5. Hou, F.Q., et al. 2015. Tetraspanin 1 is involved in survival, proliferation and carcinogenesis of pancreatic cancer. Oncol. Rep. 34: 3068-3076.
6. Hu, T., et al. 2015. Elevated glucose-6-phosphate dehydrogenase expression in the cervical cancer cases is associated with the cancerigenic event of high-risk human papillomaviruses. Exp. Biol. Med. 240: 1287-1297.
7. Younis, R.H., et al. 2016. Human head and neck squamous cell carcinoma-associated semaphorin 4D induces expansion of myeloid-derived suppressor cells. J. Immunol. 196: 1419-1429.
8. Wang, R., et al. 2016. ASC-J9(®) suppresses castration resistant prostate cancer progression via degrading the enzalutamide-induced androgen receptor mutant AR-F876L. Cancer Lett. 379: 154-60.
9. Chen, Y., et al. 2016. miR-34C disrupts the stemness of purified $CD133^+$ prostatic cancer stem cells. Urology 96: 177.e1-177.e9.

CONJUGATES

See **GAPDH (0411): sc-47724** for GAPDH antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.