SANTA CRUZ BIOTECHNOLOGY, INC.

GAPDH (1D4): sc-59540

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 a 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 neuro-degenerative disorders including the β-Amyloid precursor, Huntingtin and other triplet repeat neuronal disorder proteins.

CHROMOSOMAL LOCATION

Genetic locus: GAPDH (human) mapping to 12p13.31; Gapdh (mouse) mapping to 6 F3.

SOURCE

GAPDH (1D4) is a mouse monoclonal antibody raised against GAPDH of porcine origin.

PRODUCT

Each vial contains 100 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and 5% glycerol.

APPLICATIONS

GAPDH (1D4) is recommended for detection of GAPDH of mouse, rat, human, bovine and porcine origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:500-1:2500), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500).

Suitable for use as control antibody for GAPDH siRNA (h): sc-35448, GAPDH siRNA (m): sc-35449, GAPDH siRNA (r): sc-270067, GAPDH shRNA Plasmid (h): sc-35448-SH, GAPDH shRNA Plasmid (m): sc-35449-SH, GAPDH shRNA Plasmid (r): sc-270067-SH, GAPDH shRNA (h) Lentiviral Particles: sc-35448-V, GAPDH shRNA (m) Lentiviral Particles: sc-35449-V and GAPDH shRNA (r) Lentiviral Particles: sc-270067-V.

Molecular Weight of GAPDH: 37 kDa.

Positive Controls: JAR cell lysate: sc-2276, Hep G2 cell lysate: sc-2227 or KNRK whole cell lysate: sc-2214.

STORAGE

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

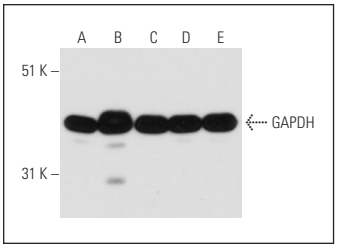
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

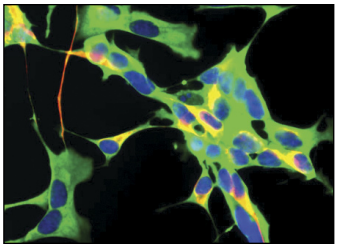
RESEARCH USE

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

DATA



GAPDH (1D4): sc-59540. Western blot analysis of GAPDH expression in Hep G2 (**A**), KNRK (**B**), JAR (**C**), HeLa (**D**) and Raji (**E**) whole cell lysates.



GAPDH (1D4): sc-59540. Immunofluorescence staining of methanol-fixed human neuroblastoma cells showing cytoplasmic localization (green).

SELECT PRODUCT CITATIONS

1. Cheong, J.K., et al. 2008. CRM1-mediated nuclear export is required for 26S proteasome-dependent degradation of the TRIP-BR2 proto-oncoprotein. J. Biol. Chem. 283: 11661-11676.
2. Wu, F., et al. 2011. Endogenous axon guiding chemorepulsant semaphorin-3F inhibits the growth and metastasis of colorectal carcinoma. Clin. Cancer Res. 17: 2702-2711.
3. Nakagawa, S., et al. 2012. Involvement of autophagy in the pharmacological effects of the mTOR inhibitor everolimus in acute kidney injury. Eur. J. Pharmacol. 696: 143-154.
4. Li, A., et al. 2013. Comparison of the longissimus muscle proteome between obese and lean pigs at 180 days. Mamm. Genome 24: 72-79.
5. Chen, H., et al. 2014. MiR-709 inhibits 3T3-L1 cell differentiation by targeting GSK3β of Wnt/β-catenin signaling. Cell. Signal. 26: 2583-2589.
6. Zhao, D., et al. 2015. MicroRNA-203 inhibits the malignant progression of neuroblastoma by targeting Sam68. Mol. Med. Rep. 12: 5554-5560.
7. Li, M., et al. 2016. MiR-709 modulates LPS-induced inflammatory response through targeting GSK-3β. Int. Immunopharmacol. 36: 333-338.
8. Loboda, A., et al. 2017. Effect of heme oxygenase-1 on ochratoxin A-induced nephrotoxicity in mice. Int. J. Biochem. Cell Biol. 84: 46-57.
9. Tong, H., et al. 2018. Bta-miR-378 promote the differentiation of bovine skeletal muscle-derived satellite cells. Gene 668: 246-251.
10. Lv, M.Y., et al. 2019. Urolithin B suppresses tumor growth in hepatocellular carcinoma through inducing the inactivation of Wnt/β-catenin signaling. J. Cell. Biochem. 120: 17273-17282.
11. Sowers, M.L., et al. 2020. Bisphenol A activates an innate viral immune response pathway. J. Proteome Res. 19: 644-654.

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.