SANTA CRUZ BIOTECHNOLOGY, INC.

GAPDH (0411): sc-47724

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.

CHROMOSOMAL LOCATION

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

SOURCE

GAPDH (0411) is a mouse monoclonal antibody raised against recombinant GAPDH of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GAPDH (0411) is available conjugated to agarose (sc-47724 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-47724 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47724 PE), fluorescein (sc-47724 FITC), Alexa Fluor® 488 (sc-47724 AF488), Alexa Fluor® 546 (sc-47724 AF546), Alexa Fluor® 594 (sc-47724 AF594) or Alexa Fluor® 647 (sc-47724 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47724 AF680) or Alexa Fluor® 790 (sc-47724 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GAPDH (0411) is recommended for detection of GAPDH of 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); not recommended for detection of GAPDH of mouse or rat origin.

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.

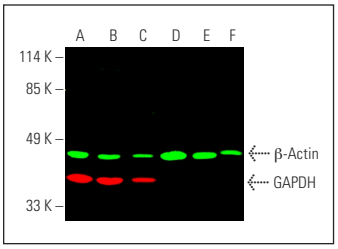
Molecular Weight of GAPDH: 37 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or A549 cell lysate: sc-2413.

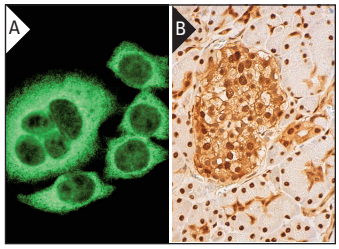
STORAGE

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

DATA



Simultaneous direct near-infrared western blot analysis of GAPDH expression, detected with GAPDH (0411) Alexa Fluor® 790: sc-47724 AF790 and β-Actin expression, detected with β-Actin (C4) Alexa Fluor® 680: sc-47778 AF680 in A549 (**A**), HeLa (**B**), Hep G2 (**C**), NIH/3T3 (**D**), Sol8 (**E**) and KNRK (**F**) whole cell lysates. Note lack of reactivity with mouse and rat GAPDH in lanes **D**-**F**. Blocked with UltraCruz® Blocking Reagent: sc-516214.



GAPDH (0411): sc-47724. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). GAPDH (0411): sc-47724 HRP. Direct Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of exocrine glandular cells and nuclear and cytoplasmic staining of Islets of Langerhans. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Daling, J.R., et al. 1987. Sexual practices, sexually transmitted diseases, and the incidence of anal cancer. N. Engl. J. Med. 317: 973-977.
2. Huang, C.Y., et al. 2018. Mitochondrial Ros-induced ERK1/2 activation and HSF2-mediated AT_1 R upregulation are required for doxorubicin-induced cardiotoxicity. J. Cell. Physiol. 233: 463-475.
3. Chen, W., et al. 2018. Phosphorylation of connexin 43 induced by traumatic brain injury promotes exosome release. J. Neurophysiol. 119: 305-311.
4. Xie, M., et al. 2018. MicroRNA-1 acts as a tumor suppressor microRNA by inhibiting angiogenesis-related growth factors in human gastric cancer. Gastric Cancer 21: 41-54.
5. Li, D., et al. 2018. Long noncoding RNA pancEts-1 promotes neuroblastoma progression through hnRNPK-mediated β-catenin stabilization. Cancer Res. 78: 1169-1183.
6. Roy, S., et al. 2018. p53 suppresses mutagenic Rad52 and POLθ pathways by orchestrating DNA replication restart homeostasis. Elife 7 pii: e31723.
7. Su, R., et al. 2018. R-2HG exhibits anti-tumor activity by targeting FTO/m^6A/MYC/CEBPA signaling. Cell 172: 90-105.
8. Weng, H., et al. 2018. METTL14 inhibits hematopoietic stem/progenitor differentiation and promotes leukemogenesis via mRNA m^6A modification. Cell Stem Cell 22: 191-205.
9. Wang, H., et al. 2018. miR-16 mimics inhibit TGF-β1-induced epithelial-to-mesenchymal transition via activation of autophagy in non-small cell lung carcinoma cells. Oncol. Rep. 39: 247-254.

RESEARCH USE

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