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.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

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.

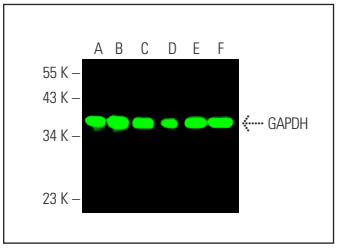
Molecular Weight of GAPDH: 37 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

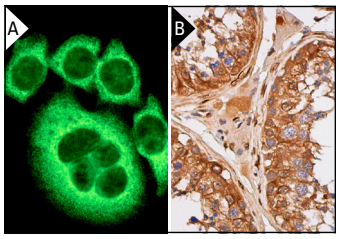
STORAGE

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

DATA



GAPDH (0411): sc-47724. Near-Infrared western blot analysis of GAPDH expression in Jurkat (**A**), MOLT-4 (**B**), HeLa (**C**), K-562 (**D**), BJAB (**E**) and IMR-32 (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG Fc BP-CFL 680: sc-533657.



GAPDH (0411): sc-47724. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). GAPDH (0411) HRP: sc-47724 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and nuclear staining of cells in seminiferous ducts and Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. Harp, J.B., et al. 2001. Differential expression of signal transducers and activators of transcription during human adipogenesis. Biochem. Biophys. Res. Commun. 281: 907-912.
2. 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.
3. Avagliano Trezza, R., et al. 2019. Loss of nuclear UBE3A causes electrophysiological and behavioral deficits in mice and is associated with Angelman syndrome. Nat. Neurosci. 22: 1235-1247.
4. De Pace, R., et al. 2020. Synaptic vesicle precursors and lysosomes are transported by different mechanisms in the axon of mammalian neurons. Cell Rep. 31: 107775.
5. Ge, N., et al. 2021. Upregulation of KCNMA1 facilitates the reversal effect of verapamil on the chemoresistance to cisplatin of esophageal squamous cell carcinoma cells. Eur. Rev. Med. Pharmacol. Sci. 25: 1869-1880.
6. Liu, J., et al. 2022. The Smad4-MYO18A-PP1A complex regulates β-catenin phosphorylation and pemigatinib resistance by inhibiting PAK1 in cholangiocarcinoma. Cell Death Differ. 29: 818-831.
7. Wang, W., et al. 2023. The E3 ligase Riplet promotes RIG-I signaling independent of RIG-I oligomerization. Nat. Commun. 14: 7308.
8. Abe, M., et al. 2024. Epidermal keratinocytes regulate hyaluronan metabolism via extracellularly secreted hyaluronidase 1 and hyaluronan synthase 3. J. Biol. Chem. 300: 107449.
9. Mensah, G.A., et al. 2025. Effect of kinases in extracellular vesicles from HIV-1-infected cells on bystander cells. Cells 14: 119.

RESEARCH USE

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