

GAPDH (0411): sc-47724

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 uracil 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 μ g IgG₁ 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 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-47724 HRP), 200 μ g/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 μ g/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 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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 μ g per 100-500 μ g 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.

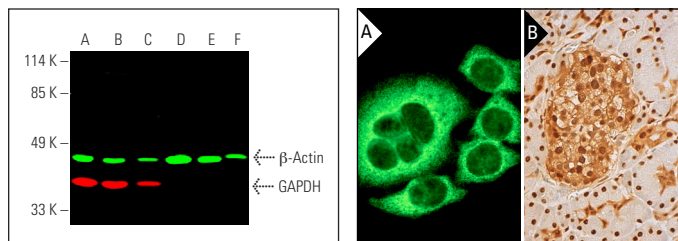
Molecular Weight of GAPDH: 37 kDa.

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

- Daling, J.R., et al. 1987. Sexual practices, sexually transmitted diseases, and the incidence of anal cancer. *N. Engl. J. Med.* 317: 973-977.
- Smith, R.L., et al. 2014. Synthesis of a novel legumain-cleavable colchicine prodrug with cell-specific toxicity. *Bioorg. Med. Chem.* 22: 3309-3315.
- Zhang, Y., et al. 2015. Down-regulated long non-coding RNA MEG3 and its effect on promoting apoptosis and suppressing migration of trophoblast cells. *J. Cell. Biochem.* 116: 542-550.
- Lv, O., et al. 2016. Mild hypothermia protects against early brain injury in rats following subarachnoid hemorrhage via the TrkB/ERK/CREB signaling pathway. *Mol. Med. Rep.* 14: 3901-3907.
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- Weng, H., et al. 2018. METTL14 inhibits hematopoietic stem/progenitor differentiation and promotes leukemogenesis via mRNA m⁶A modification. *Cell Stem Cell* 22: 191-205.
- 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.
- 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.

RESEARCH USE

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