

GAPDH (D-6): sc-166545

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 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 neuro-degenerative 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 glyceraldehyde-3-phosphate dehydrogenase. *Proc. Natl. Acad. Sci. USA* 88: 8460-8464.
2. Rondinelli, R.H., et al. 1997. Increased glyceraldehyde-3-phosphate dehydrogenase gene expression in late pathological stage human prostate cancer. *Prostate Cancer Prostatic Dis.* 1: 66-72.

CHROMOSOMAL LOCATION

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

SOURCE

GAPDH (D-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 255-280 near the C-terminus of GAPDH of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GAPDH (D-6) is available conjugated to agarose (sc-166545 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166545 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166545 PE), fluorescein (sc-166545 FITC), Alexa Fluor® 488 (sc-166545 AF488), Alexa Fluor® 546 (sc-166545 AF546), Alexa Fluor® 594 (sc-166545 AF594) or Alexa Fluor® 647 (sc-166545 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166545 AF680) or Alexa Fluor® 790 (sc-166545 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166545 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

GAPDH (D-6) is recommended for detection of GAPDH of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

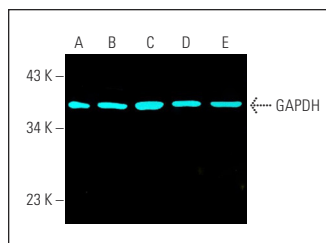
GAPDH (D-6) is also recommended for detection of GAPDH in additional species, including equine, canine, bovine and porcine.

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.

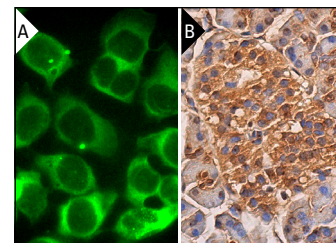
Molecular Weight of GAPDH: 37 kDa.

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

DATA



GAPDH (D-6) Alexa Fluor® 647: sc-166545 AF647. Direct fluorescent western blot analysis of GAPDH expression in NIH/3T3 (A), Hep G2 (B), HeLa (C) and A549 (D) whole cell lysates and human pancreas tissue extract (E). Blocked with UltraCruz® Blocking Reagent: sc-516214.



GAPDH (D-6): sc-166545. Immunofluorescence detection of GAPDH in methanol-fixed HeLa cells showing cytoplasmic localization. Detection reagent used: m-IgGκ BP-FITC: sc-516140 (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic and nuclear staining of exocrine glandular cells and Islets of Langerhans (B).

SELECT PRODUCT CITATIONS

1. Li, W., et al. 2010. The conserved CXXC motif of hepatic stimulator substance is essential for its role in mitochondrial protection in H₂O₂-induced cell apoptosis. *FEBS Lett.* 584: 3929-3935.
2. Wang, Y., et al. 2019. Combination of hesperetin and platinum enhances anticancer effect on lung adenocarcinoma. *Biomed. Pharmacother.* 113: 108779.
3. Zhao, K., et al. 2020. WDR63 inhibits Arp2/3-dependent Actin polymerization and mediates the function of p53 in suppressing metastasis. *EMBO Rep.* 21: e49269.

RESEARCH USE

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