SANTA CRUZ BIOTECHNOLOGY, INC.

GAPDH (H-12): sc-166574

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.

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 (H-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 80-115 within an internal region of GAPDH of human origin.

PRODUCT

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

GAPDH (H-12) is available conjugated to agarose (sc-166574 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166574 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166574 PE), fluorescein (sc-166574 FITC), Alexa Fluor® 488 (sc-166574 AF488), Alexa Fluor® 546 (sc-166574 AF546), Alexa Fluor® 594 (sc-166574 AF594) or Alexa Fluor® 647 (sc-166574 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166574 AF680) or Alexa Fluor® 790 (sc-166574 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166574 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

GAPDH (H-12) 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 µg per 100-500 µg 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).

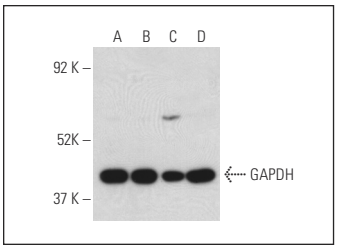
GAPDH (H-12) is also recommended for detection of GAPDH in additional species, including canine, bovine, porcine and avian.

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.

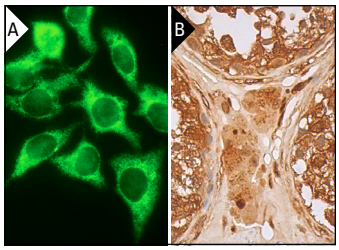
Molecular Weight of GAPDH: 37 kDa.

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

DATA



GAPDH (H-12): sc-166574. Western blot analysis of GAPDH expression in HeLa (**A**), Jurkat (**B**), K-562 (**C**) and A-431 (**D**) whole cell lysates. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



GAPDH (H-12): sc-166574. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). GAPDH (H-12) HRP: sc-166574 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. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Meador, J.A., et al. 2008. Histone H2AX is a critical factor for cellular protection against DNA alkylating agents. Oncogene 27: 5662-5671.
2. Huang, P., et al. 2022. Lysosomal ATP transporter SLC17A9 controls cell viability via regulating cathepsin D. Cells 11: 887.
3. Iannucci, L.F., et al. 2023. Cyclic AMP induces reversible EPAC1 condensates that regulate histone transcription. Nat. Commun. 14: 5521.
4. Sundaram, B., et al. 2024. NLRC5 senses NAD^+ depletion, forming a PANoptosome and driving PANoptosis and inflammation. Cell 187: 4061-4077.e17.

RESEARCH USE

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