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GAPDH Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM1020b

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P04406
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	1A10A10
Calculated MW	36053

Additional Information

Gene ID	2597
Other Names	Glyceraldehyde-3-phosphate dehydrogenase, GAPDH, Peptidyl-cysteine S-nitrosylase GAPDH, 2699-, GAPDH, GAPD
Target/Specificity	GAPDH recombinant protein is used to produce this monoclonal antibody.
Dilution	WB~~1:8000 IHC-P~~1:100~500 IF~~1:25 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	GAPDH Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GAPDH {ECO:0000303|PubMed:2987855, ECO:0000312|HGNC:HGNC:4141}
Function	Catalyzes the conversion of D-glyceraldehyde 3-phosphate (G3P) into 3-phospho-D-glyceroyl phosphate in glycolysis and the reverse reaction in gluconeogenesis (PubMed:11724794, PubMed:3170585). Also shows nitrosylase activity, thereby playing a role in nuclear functions (PubMed:11724794, PubMed:3170585). Modulates the organization and assembly of the cytoskeleton (By similarity). Facilitates the CHP1- dependent

microtubule and membrane associations through its ability to stimulate the binding of CHP1 to microtubules (By similarity). Component of the GAIT (gamma interferon-activated inhibitor of translation) complex which mediates interferon-gamma-induced transcript-selective translation inhibition in inflammation processes (PubMed:23071094). Upon interferon-gamma treatment assembles into the GAIT complex which binds to stem loop-containing GAIT elements in the 3'-UTR of diverse inflammatory mRNAs (such as ceruplasmin) and suppresses their translation (PubMed:23071094). Also plays a role in innate immunity by promoting TNF-induced NF-kappa-B activation and type I interferon production, via interaction with TRAF2 and TRAF3, respectively (PubMed:23332158, PubMed:27387501). Participates in nuclear events including transcription, RNA transport, DNA replication and apoptosis (By similarity). Nuclear functions are probably due to the nitrosylase activity that mediates cysteine S-nitrosylation of nuclear target proteins such as SIRT1, HDAC2 and PRKDC (By similarity).

Cellular Location

Cytoplasm, cytosol. Nucleus {ECO:0000250|UniProtKB:P04797}. Cytoplasm, perinuclear region. Membrane Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:P04797} Note=Translocates to the nucleus following S-nitrosylation and interaction with SIAH1, which contains a nuclear localization signal (By similarity). Postnuclear and Perinuclear regions (PubMed:12829261) {ECO:0000250|UniProtKB:P04797, ECO:0000269|PubMed:12829261}

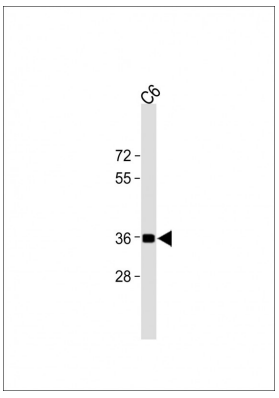
Background

The product of this gene catalyzes an important energy-yielding step in carbohydrate metabolism, the reversible oxidative phosphorylation of glyceraldehyde-3-phosphate in the presence of inorganic phosphate and nicotinamide adenine dinucleotide (NAD). The enzyme exists as a tetramer of identical chains. Many pseudogenes similar to this locus are present in the human genome.

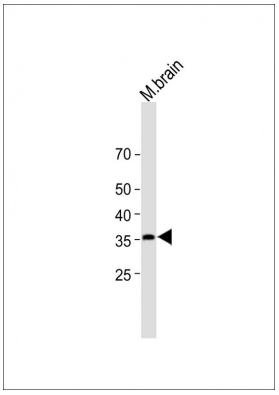
References

Inhibition of glyceraldehyde-3-phosphate dehydrogenase activity by antibodies present in the cerebrospinal fluid of patients with multiple sclerosis. K lln J, et al. J Immunol, 2010 Aug 1. PMID 20610654. Proteome analysis of the thalamus and cerebrospinal fluid reveals glycolysis dysfunction and potential biomarkers candidates for schizophrenia. Martins-de-Souza D, et al. J Psychiatr Res, 2010 May 14. PMID 20471030. Sex-specific proteome differences in the anterior cingulate cortex of schizophrenia. Martins-de-Souza D, et al. J Psychiatr Res, 2010 Apr 8. PMID 20381070. Identification of melanoma antigens using a Serological Proteome Approach (SERPA). Suzuki A, et al. Cancer Genomics Proteomics, 2010 Jan-Feb. PMID 20181627. siah-1 Protein is necessary for high glucose-induced glyceraldehyde-3-phosphate dehydrogenase nuclear accumulation and cell death in Muller cells. Yego EC, et al. J Biol Chem, 2010 Jan 29. PMID 19940145.

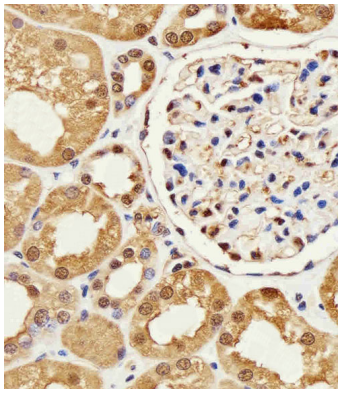
Images



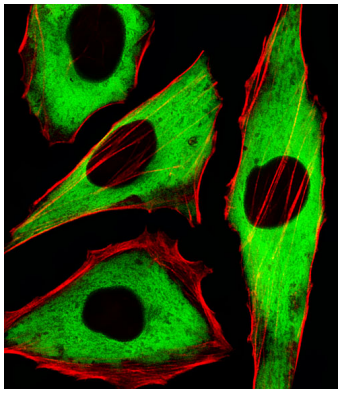
All lanes: Anti-GAPDH Antibody at 1:1000 dilution + C6 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated (ASP1613) at 1/15000 dilution. Observed band size: 36KDa Blocking/Dilution buffer: 5% NFDM/TBST.



All lanes: Anti-GAPDH Antibody at 1:1000 dilution + mouse brain lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated (ASP1613) at 1/15000 dilution. Observed band size: 36KDa Blocking/Dilution buffer: 5% NFDM/TBST.



Immunohistochemical analysis of paraffin-embedded H.kidney section using GAPDH Antibody(Cat#AM1020b). AM1020b was diluted at 1:25 dilution. A peroxidase-conjugated goat anti-mouse IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.



Fluorescent image of Hela cells stained with XAF1 GAPDH Antibody(Cat#AM1020b). AM1020b was diluted at 1:25 dilution. An Alexa Fluor® 488-conjugated goat anti-mouse IgG at 1:400 dilution was used as the secondary antibody (green). Cytoplasmic actin was counterstained with Alexa Fluor® 555 conjugated with Phalloidin (red).

Citations

- DAB2IP decreases cell growth and migration and increases sensitivity to chemotherapeutic drugs in colorectal cancer
- Glutamate receptor, ionotropic, N □methyl D □aspartate □associated protein 1 promotes colorectal cancer cell proliferation and metastasis, and is negatively regulated by miR □296 □3p
- CDK4/6 inhibitor palbociclib promotes SARS-CoV-2 cell entry by down-regulating SKP2 dependent ACE2 degradation
- Dl-3-n-butylphthalide alleviates cognitive impairment in amyloid precursor protein/presenilin 1 transgenic mice by regulating the striatal-enriched protein tyrosine phosphatase/ERK/cAMP-response element-binding protein signaling pathway
- RanBP2/Nup358 enhances miRNA activity by sumoylating Argonautes
- Wall Teichoic Acid Glycosylation Promotes Surface Anchoring of Virulence Factors, Resistance to Antimicrobial Peptides, and Decreased Susceptibility to Antibiotics
- The E3 ubiquitin ligase UBR5 interacts with TTC7A and may be associated with very early onset inflammatory bowel disease
- miR-520h Stimulates Drug Resistance to Paclitaxel by Targeting the OTUD3-PTEN Axis in Breast Cancer
- Differential red blood cell age fractionation and Band 3 phosphorylation distinguish two different subtypes of warm autoimmune hemolytic anemia
- Long noncoding RNA atlas of the inflammation caused by asthma in mice
- Ectodermal-neural cortex 1 as a novel biomarker predicts poor prognosis and induces metastasis in breast cancer by promoting Wnt/β-catenin pathway
- Circular RNA atlas in osteoclast differentiation with and without alendronate treatment
- Iron overload contributes to general anaesthesia-induced neurotoxicity and cognitive deficits

- CircRNA_102179 promotes the proliferation, migration and invasion in non-small cell lung cancer cells by regulating miR-330-5p/HMGB3 axis
- Screening and identification of epithelial-to-mesenchymal transition-related circRNA and miRNA in prostate cancer
- Deoxycholic Acid Upregulates Serum Golgi Protein 73 through Activating NF-κB Pathway and Destroying Golgi Structure in Liver Disease
- Isochamaejasmin induces toxic effects on Helicoverpa zea via DNA damage and mitochondria-associated apoptosis
- A multi-kinase inhibitor APG-2449 enhances the antitumor effect of ibrutinib in esophageal squamous cell carcinoma via EGFR/FAK pathway inhibition
- Altered decidual and placental catabolism of vitamin D may contribute to the aetiology of spontaneous miscarriage
- Effect of Furostanol Saponins from Allium Macrostemon Bunge Bulbs on Platelet Aggregation Rate and PI3K/Akt Pathway in the Rat Model of Coronary Heart Disease.
- Induction of mTOR-dependent autophagy by WS nanosheets from both inside and outside of human cells.
- An in vitro model of foam cell formation induced by a stretchable microfluidic device.
- MicroRNA-26a inhibits multiple myeloma cell growth by suppressing cyclin-dependent kinase 6 expression.
- Exosomes increased angiogenesis in papillary thyroid cancer microenvironment.
- Inhibition of the deubiquitinase USP9x induces pre-B cell homeobox 1 (PBX1) degradation and thereby stimulates prostate cancer cell apoptosis.
- Downregulation of endothelial transient receptor potential vanilloid type 4 channel underlines impaired endothelial nitric oxide-mediated relaxation in the mesenteric arteries of hypertensive rats.
- Selenium-Rich Diet Induces Myocardial Structural and Functional Abnormalities by Activating Caspase-9 and Caspase-3 in Gpx-1P198L-Overexpression Transgenic Mice.
- Cyclin O regulates germinal vesicle breakdown in mouse oocytes.
- Molecular In Vivo Imaging Using a Noninvasive Cardiac-Specific MLC-2v Promoter Driven Dual-Gene Recombinant Lentivirus Monitoring System.
- SC06, a novel small molecule compound, displays preclinical activity against multiple myeloma by disrupting the mTOR signaling pathway.
- Upregulation of microRNA-96 and its oncogenic functions by targeting CDKN1A in bladder cancer.
- Hepatocellular Carcinoma Cells Induce Regulatory T Cells and Lead to Poor Prognosis via Production of Transforming Growth Factor-β1.
- Pulsatile delivery of a leucine supplement during long-term continuous enteral feeding enhances lean growth in term neonatal pigs.
- Hepatitis C Virus Entry into Macrophages/Monocytes Mainly Depends on the Phagocytosis of Macrophages.
- The natural polyphenol curcumin induces apoptosis by suppressing STAT3 signaling in esophageal squamous cell carcinoma.
- DFMG attenuates the activation of macrophages induced by co □culture with LPC □injured HUVE □12 cells via the TLR4/MyD88/NF □κB signaling pathway.
- l-Rhamnosylation of wall teichoic acids promotes efficient surface association of Listeria monocytogenes virulence factors InlB and Ami through interaction with GW domains.
- Peptide SS-31 upregulates frataxin expression and improves the quality of mitochondria: implications in the treatment of Friedreich ataxia.
- Expression and prognostic significance of MYL9 in esophageal squamous cell carcinoma.
- Silencing DNA methyltransferase 1 (DNMT1) inhibits proliferation, metastasis and invasion in ESCC by suppressing methylation of RASSF1A and DAPK.
- Nutrition deficiency promotes apoptosis of cartilage endplate stem cells in a caspase-independent manner partially through upregulating BNIP3.
- The Role of Annexin A4 in Triple-Negative Breast Cancer Progression and Its Clinical Application.
- Use of rhenium-188 for in vivo imaging and treatment of human cervical cancer cells transfected with lentivirus expressing sodium iodide symporter.
- Down-Regulation of CIDEA Promoted Tumor Growth and Contributed to Cisplatin Resistance by Regulating the JNK-p21/Bad Signaling Pathways in Esophageal Squamous Cell Carcinoma

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