10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GAPDH Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AW5681

Product Information

Application	WB
Primary Accession	P04406
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Calculated MW	36053
Isotype	IgG1,k
Antigen Source	HUMAN

Additional Information

Gene ID	2597
Antigen Region	43-335
Other Names	Glyceraldehyde-3-phosphate dehydrogenase, GAPDH, 1.2.1.12, Peptidyl-cysteine S-nitrosylase GAPDH, 2.6.99.-, GAPDH, GAPD
Dilution	WB~~1:10000
Target/Specificity	This GAPDH antibody is generated from a mouse immunized with a recombinant protein between 43-335 amino acids from human GAPDH.
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	Has both glyceraldehyde-3-phosphate dehydrogenase and nitrosylase activities, thereby playing a role in glycolysis and nuclear functions, respectively (PubMed:11724794, PubMed:3170585). Glyceraldehyde-3-phosphate dehydrogenase is a key enzyme in glycolysis that

	catalyzes the first step of the pathway by converting D- glyceraldehyde 3-phosphate (G3P) into 3-phospho-D-glyceroyl phosphate (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

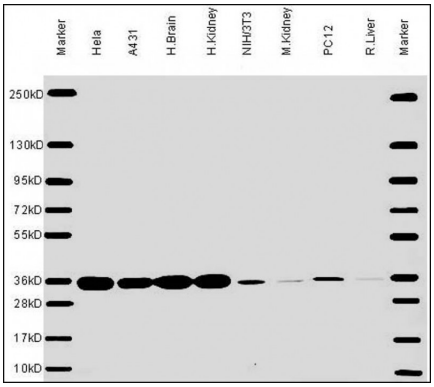
Has both glyceraldehyde-3-phosphate dehydrogenase and nitrosylase activities, thereby playing a role in glycolysis and nuclear functions, respectively. Participates in nuclear events including transcription, RNA transport, DNA replication and apoptosis. Nuclear functions are probably due to the nitrosylase activity that mediates cysteine S-nitrosylation of nuclear target proteins such as SIRT1, HDAC2 and PRKDC. Modulates the organization and assembly of the cytoskeleton. Facilitates the CHP1-dependent microtubule and membrane associations through its ability to stimulate the binding of CHP1 to microtubules (By similarity). Glyceraldehyde-3-phosphate dehydrogenase is a key enzyme in glycolysis that catalyzes the first step of the pathway by converting D-glyceraldehyde 3-phosphate (G3P) into 3-phospho-D- glyceroyl phosphate. Component of the GAIT (gamma interferon- activated inhibitor of translation) complex which mediates interferon-gamma-induced transcript-selective translation inhibition in inflammation processes. 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.

References

Hanauer A.,et al.EMBO J. 3:2627-2633(1984).
Arcari P.,et al.Nucleic Acids Res. 12:9179-9189(1984).
Tso J.Y.,et al.Nucleic Acids Res. 13:2485-2502(1985).
Tokunaga K.,et al.Cancer Res. 47:5616-5619(1987).
Allen R.W.,et al.J. Biol. Chem. 262:649-653(1987).

Images

All lanes : Anti-GAPDH Antibody at1:10000 dilution Lane



1: Hela whole cell lysate Lane 2: A431 whole cell lysate Lane 3: human brain lysate Lane 4: human kidney lysate Lane 5: NIH/3T3 whole cell lysate Lane 6: mouse kidney lysate Lane 7: PC12 whole cell lysate Lane 8: rat Liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 36 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Citations

- PTPN1 promotes the progression of glioma by activating the MAPK/ERK and PI3K/AKT pathways and is associated with poor patient survival.