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GAPDH Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AP52680

Product Information

Application	WB
Primary Accession	P04406
Reactivity	Rat, Human, Mouse, Hamster, Monkey
Host	Mouse
Clonality	Monoclonal
Isotype	IgM
Conjugate	Unconjugated
Immunogen	Purified recombinant human GAPDH protein fragments expressed in E.coli.
Purification	Affinity Purified
Calculated MW	36053

Additional Information

Gene ID	2597
Other Names	38 kDa BFA-dependent ADP-ribosylation substrate;aging associated gene 9 protein;Aging-associated gene 9 protein;BARS-38;cb609;EC 1.2.1.12;G3P_HUMAN;G3PD;G3PDH;GAPD;GAPDH; GAPDH;Glyceraldehyde 3 phosphate dehydrogenase;Glyceraldehyde 3 phosphate dehydrogenase liver;Glyceraldehyde 3 phosphate dehydrogenase muscle;Glyceraldehyde-3-phosphate dehydrogenase;KNC-NDS6;MGC102544; MGC102546;MGC103190;MGC103191;MGC105239;MGC127711; MGC88685;OCAS, p38 component;OCT1 coactivator in S phase, 38-KD component;peptidyl cysteine S nitrosylase GAPDH;Peptidyl-cysteine S-nitrosylase GAPDH;wu:fb33a10.
Dilution	WB~~1:5000
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide, pH 7.3.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

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

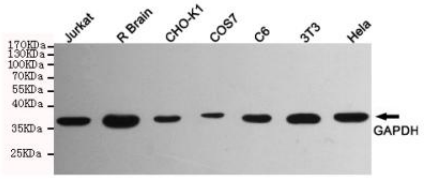
Has both glyceraldehyde-3-phosphate dehydrogenase and nitrosylase activities, thereby playing a role in glycolysis and nuclear functions, respectively. Participates in nuclear events including transcription, RNA transport, DNA replication and apoptosis. Nuclear functions are probably due to the nitrosylase 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

Western blot detection of GAPDH in
Hela,3T3,C6,COS7,CHO-K1,Rat brain and Jurkat cell lysates



using GAPDH mouse mAb (1:5000 diluted).Predicted band size:36KDa.Observed band size:36KDa.

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