

# GAPDH(human specific) Antibody

Purified Mouse Monoclonal Antibody (Mab) Catalog # AP52679

## **Product Information**

Primary Accession P04406
Host Mouse
Clonality Monoclonal
Isotype IgG1
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.

Format Purified mouse monoclonal in buffer containing 0.1M Tris-Glycine(pH 7.4,150

mM NaCl)with 0.09% (W/V) sodium azide,0.1mg/mlBSA and 50% glycerol.

**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** 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**

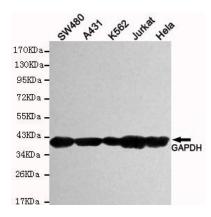
Has both glyceraldehyde-3-phosphate dehydrogenase and nitrosylase activities, thereby playing a role in glycolysis and nuclear functions, respectively. Participates in nuclear events including transcription, RNA transport, DNA replication and apoptosis. Nuclear functions are probably due to the nitrosylase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

Western blot detection of GAPDH(human specific) in SW480,A431,K562,Jurkat and Hela cell lysates using GAPDH(human specific) mouse mAb (1:5000 diluted). Predicted band size:37KDa.Observed band size:37KDa.



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