ARG42505
anti-GAPDH antibody

Package: 100 µg
Store at: -20°C

Summary

Product Description	Goat Polyclonal antibody recognizes GAPDH
Tested Reactivity	Hu, Ms, Rat, Dog, Mk, Zfsh
Tested Application	ICC/IF, IHC-Fr, IHC-P, WB
Host	Goat
Clonality	Polyclonal
Isotype	IgG
Target Name	GAPDH
Species	Human
Immunogen	Purified recombinant peptide within aa. 240 to the C-terminus of Human GAPDH.
Conjugation	Un-conjugated
Alternate Names	Glyceraldehyde-3-phosphate dehydrogenase; GAPD; HEL-S-162eP; G3PD; GAPDH; Peptidyl-cysteine S-nitrosylase GAPDH; EC 2.6.99.-; EC 1.2.1.12

Application Instructions

Application table

Application	Dilution
ICC/IF	1:50 - 1:250
IHC-Fr	1:200 - 1:1000
IHC-P	1:200 - 1:1000
WB	1:500 - 1:5000

Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.
Positive Control	HT1080
Observed Size	~ 40 kDa

Properties

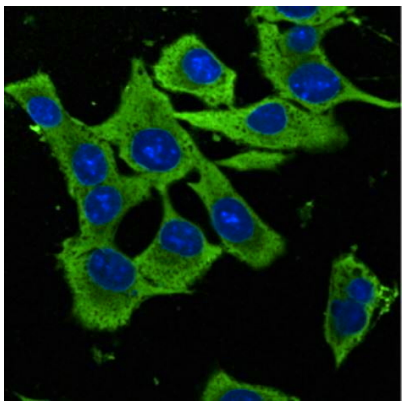
Form	Liquid
Purification	Affinity purification with immunogen.
Buffer	PBS, 0.05% Sodium azide and 20% Glycerol.
Preservative	0.05% Sodium azide
Stabilizer	20% Glycerol
Concentration	2 mg/ml

Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

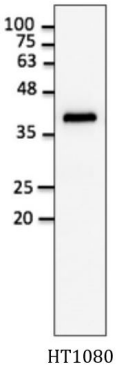
Gene Symbol	GAPDH
Gene Full Name	glyceraldehyde-3-phosphate dehydrogenase
Background	This gene encodes a member of the glyceraldehyde-3-phosphate dehydrogenase protein family. The encoded protein has been identified as a moonlighting protein based on its ability to perform mechanistically distinct functions. 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 encoded protein has additionally been identified to have uracil DNA glycosylase activity in the nucleus. Also, this protein contains a peptide that has antimicrobial activity against E. coli, P. aeruginosa, and C. albicans. Studies of a similar protein in mouse have assigned a variety of additional functions including nitrosylation of nuclear proteins, the regulation of mRNA stability, and acting as a transferrin receptor on the cell surface of macrophage. Many pseudogenes similar to this locus are present in the human genome. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Nov 2014]
Function	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. [UniProt]
Calculated Mw	36 kDa
PTM	S-nitrosylation of Cys-152 leads to interaction with SIAH1, followed by translocation to the nucleus (By similarity). S-nitrosylation of Cys-247 is induced by interferon-gamma and LDL(ox) implicating the iNOS-S100A8/9 transnitrosylase complex and seems to prevent interaction with phosphorylated RPL13A and to interfere with GAIT complex activity. ISGylated. Sulfhydration at Cys-152 increases catalytic activity. Oxidative stress can promote the formation of high molecular weight disulfide-linked GAPDH aggregates, through a process called nucleocytoplasmic coagulation. Such aggregates can be observed in vivo in the affected tissues of patients with Alzheimer disease or alcoholic liver cirrhosis, or in cell cultures during necrosis. Oxidation at Met-46 may play a pivotal role in the formation of these insoluble structures. This modification has been detected in vitro following treatment with free radical donor (+/-)-(E)-4-ethyl-2-[(E)-hydroxyimino]-5-nitro-3-hexenamide. It has been proposed to destabilize nearby residues, increasing the likelihood of secondary oxidative damages, including oxidation of Tyr-45 and Met-105. This cascade of oxidations may augment GAPDH misfolding, leading to intermolecular disulfide cross-linking and aggregation. [UniProt]
Cellular Localization	Cytoplasm, cytosol. Nucleus. Cytoplasm, perinuclear region. Membrane. Cytoplasm, cytoskeleton. Note=Translocates to the nucleus following S-nitrosylation and interaction with SIAH1, which contains a nuclear localization signal (By similarity). Postnuclear and Perinuclear regions. [UniProt]

Images



ARG42505 anti-GAPDH antibody ICC/IF image

Immunofluorescence: Hepa1-6 cells were fixed with methanol. Cells were stained with ARG42505 anti-GAPDH antibody (green) at 1:50 dilution. Nuclear staining (blue).



ARG42505 anti-GAPDH antibody WB image

Western blot: 50 µg of HT1080 cell lysate stained with ARG42505 anti-GAPDH antibody at 1:2500 dilution.