ARG10112
anti-GAPDH antibody [6C5]

Package: 100 µg, 50 µg
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [6C5] recognizes GAPDH
Tested Reactivity	Hu, Ms, Rat, AGMK, Bb, Cat, Chk, Dog, Fsh, Hm, Mk, Pig, Rb, Xenopus laevis, Zfsh
Predict Reactivity	Gpig, Hrs, Xenopus tropicalis
Species Does Not React With	Bov, Goat, S. cerevisiae
Tested Application	ELISA, ICC/IF, IHC-Fr, WB
Specificity	This antibody is specific for GAPDH of Human, Porcine, Canine, Rabbit, Cat, Rat, Mouse, Fish.
Host	Mouse
Clonality	Monoclonal
Clone	6C5
Isotype	IgG1
Target Name	GAPDH
Species	Rabbit
Immunogen	Rabbit muscle 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
ELISA	Assay-dependent
ICC/IF	5 µg/ml
IHC-Fr	1:500
WB	1:1000 - 1:10000

Application Note	* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.
Positive Control	HeLa; NTERA-2; A-431; HepG2; MCF-; NIH 3T3; PC-12; COS-7

Properties

Form	Liquid
Purification	Protein A affinity purified.
Buffer	PBS (pH 7.4) and 0.09% Sodium azide

Preservative	0.09% Sodium azide
Concentration	1 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 or below. 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	GAPDH 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	GAPDH 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. 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]
Highlight	Related Antibody Duos and Panels: ARG30001 Tag Internal Control Antibody Duo (GFP, GAPDH) ARG30002 Tag Internal Control Antibody Duo (His tag, GAPDH) ARG30061 Tag Internal Control Antibody Duo (dsRed, GAPDH) ARG30062 Tag Internal Control Antibody Duo (YFP, GAPDH) ARG30251 NFkB nuclear translocation Antibody Panel ARG30259 Loading Controls for Cytoplasmic / Nuclear Fractions Antibody Panel ARG30267 Organelle Marker, Cytoplasm, Nucleus Antibody Duo (Histone, GAPDH) ARG30270 Loading Control Antibody Panel (Actin, beta Tublin, Histone H3, GAPDH) ARG30331 NLRP3 Inflammasome Antibody Panel ARG30332 NLRC4 Inflammasome Antibody Panel Related products: GAPDH antibodies; GAPDH Duos / Panels; Anti-Mouse IgG secondary antibodies; Related news: Molecular mechanisms of labor initiation found
Research Area	Cancer antibody; Controls and Markers antibody; Metabolism antibody; Neuroscience antibody; Signaling Transduction antibody; Loading Control antibody; Loading Control antibody for Cytoplasmic Fractions; Organelle Marker antibody for Cytoplasm; Autophagy Study antibody
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

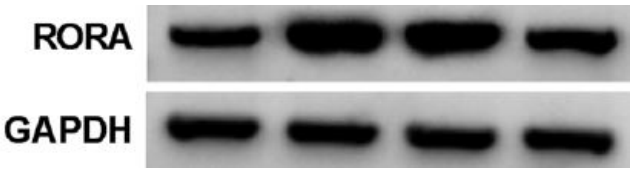
necrosis. Oxidation at Met-46 may play a pivotal role in the formation of these insoluble structures. This modification has been detected in vitro following treatment with free radical donor (+/-)-(E)-4-ethyl-2-[(E)-hydroxyimino]-5-nitro-3-hexenamide. It has been proposed to destabilize nearby residues, 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.

Images

ARG10112 anti-GAPDH antibody [6C5] WB image

Western blot: HK2 stained with ARG66421 anti-CXCL12 / SDF1 antibody [SQab18123] and ARG10112 anti-GAPDH antibody [6C5] and secondary antibody used ARG65351 Goat anti-Rabbit IgG antibody (HRP).

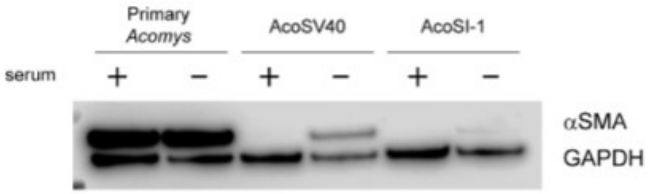
From Zhou Y et al. Central European Journal of Immunology (2022), doi: 10.5114/ceji.2022.115628, Fig. 2. E.



ARG10112 anti-GAPDH antibody [6C5] WB image

Western blot: PDLCs stained with ARG58393 anti-RORA antibody and ARG10112 anti-GAPDH antibody [6C5].

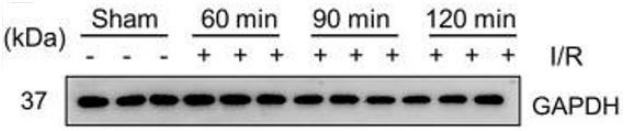
From Wang J et al. Arch Oral Biol- (2021), doi: 10.1016/j.archoralbio.2021.105053, Fig. 5. C.



ARG10112 anti-GAPDH antibody [6C5] WB image

Western blot: pAFs, AcoSV40, and AcoSI-1 stained with ARG10112 anti-GAPDH antibody [6C5] at 1:5000 dilution.

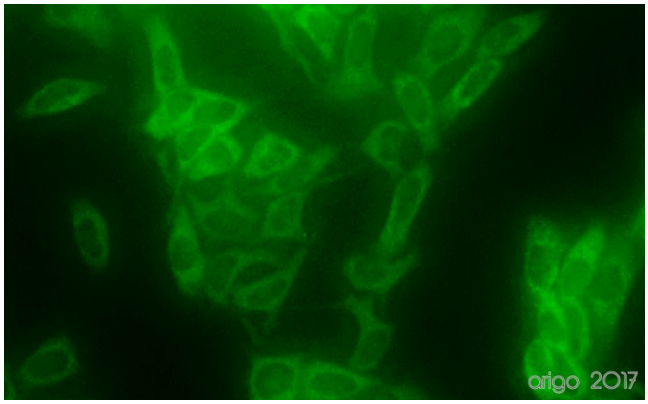
From Michele N Dill et al. PLoS One. (2023), doi: 10.3389/fcell.2022.899869, Fig. 2. C.



ARG10112 anti-GAPDH antibody [6C5] WB image

Western blot: Porcine kidney stained with ARG10112 anti-GAPDH antibody [6C5].

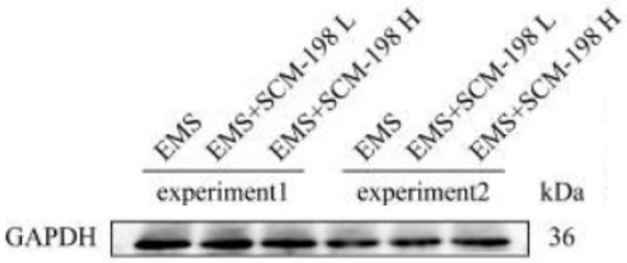
From Jianni Huang et al. Front Cell Dev Biol (2022), doi: 10.3389/fcell.2022.899869, Fig. 2. E.



ARG10112 anti-GAPDH antibody [6C5] ICC/IF image

Immunofluorescence: 100% Methanol fixed (RT, 10 min) HeLa cells stained with ARG10112 anti-GAPDH antibody [6C5] (green) at 1:200 dilution.

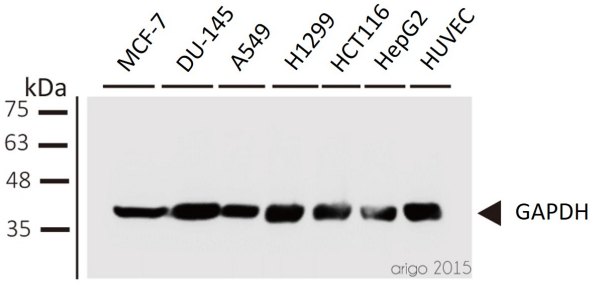
Secondary antibody: ARG55393 Goat anti-Mouse IgG (H+L) antibody (FITC)



ARG10112 anti-GAPDH antibody [6C5] WB image

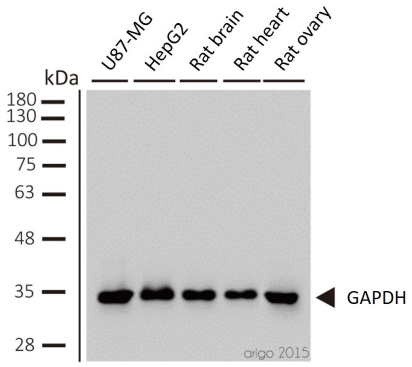
Western blot: Mouse samples stained with ARG10112 anti-GAPDH antibody [6C5] at 1:1000 dilution.

From Yun-Yun Li et al. Int J Biol Sci (2022), doi: 10.7150/ijbs.68224, Fig. 5. C.



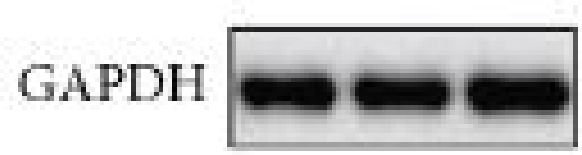
ARG10112 anti-GAPDH antibody [6C5] WB image

Western blot: 1) MCF-7 2) DU-145 3) A549 4) H1299 5) HCT116 6) HepG2 7) HUVEC stained with ARG10112 anti-GAPDH antibody [6C5] at 1:1000 dilution.



ARG10112 anti-GAPDH antibody [6C5] WB image

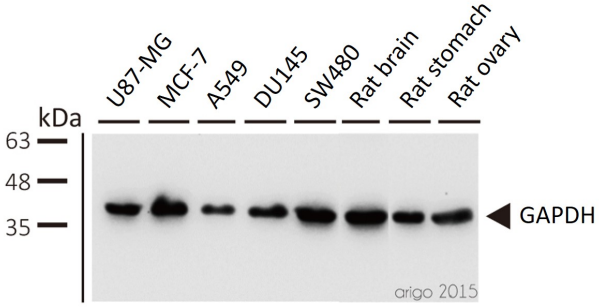
Western blot: 1) U87-MG 2) HepG2 3) rat brain 4) rat heart 5) rat ovary stained with ARG10112 anti-GAPDH antibody [6C5] at 1:2000 dilution.



ARG10112 anti-GAPDH antibody [6C5] WB image

Western blot: HUVEC stained with ARG10112 anti-GAPDH antibody [6C5].

From Bingzheng Lu et al. Oxid Med Cell Longev (2020), doi: 10.1155/2020/2048210, Fig. 5. B.



ARG10112 anti-GAPDH antibody [6C5] WB image

Western blot: 1) U87-MG 2) MCF-7 3) A549 4) DU145 5) SW480 6) rat brain 7) rat stomach 8) rat ovary stained with ARG10112 anti-GAPDH antibody [6C5] at 1:5000 dilution.