ARG66330
anti-GAPDH antibody [SQab1878]

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

Summary

Product Description	Recombinant Rabbit Monoclonal antibody [SQab1878] recognizes GAPDH
Tested Reactivity	Hu, Ms, Rat, AGMK, Bov, Chk, Pig, Xenopus laevis, Zfsh
Tested Application	FACS, ICC/IF, IHC-P, IP, WB
Host	Rabbit
Clonality	Monoclonal
Clone	SQab1878
Isotype	IgG
Target Name	GAPDH
Species	Human
Immunogen	Synthetic peptide corresponding to aa. 200-300 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
FACS	1:100 - 1:200
ICC/IF	1:100 - 1:500
IHC-P	1:100 - 1:500
IP	1:20 - 1:50
WB	1:2000 - 1:20000

Application Note: IHC-P: Antigen Retrieval: Heat mediated was performed using Tris/EDTA buffer pH 9.0.
* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

Form	Liquid
Purification	Purification with Protein A.
Buffer	PBS, 0.02% Sodium azide, 0.5% BSA and 50% Glycerol
Preservative	0.02% Sodium azide
Stabilizer	0.5% BSA and 50% Glycerol

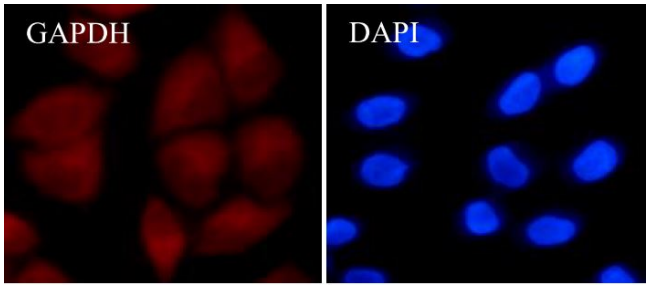
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be 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	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: ARG30320 EMT Marker Antibody Panel ARG30321 Autophagy Antibody Panel Related products: GAPDH antibodies; GAPDH Duos / Panels; Anti-Rabbit IgG secondary antibodies; Related news: New EMT antibody panel is released
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

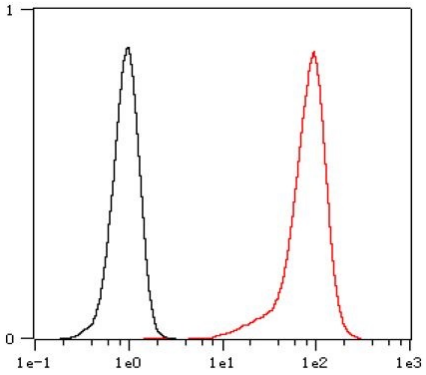
Met-105. This cascade of oxidations may augment GAPDH misfolding, leading to intermolecular disulfide cross-linking and aggregation. [UniProt]

Images



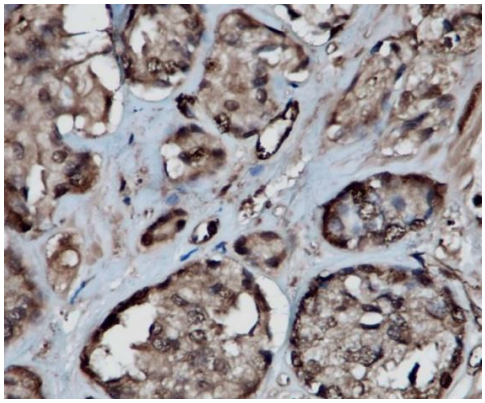
ARG66330 anti-GAPDH antibody [SQab1878] ICC/IF image

Immunofluorescence: HeLa cells were fixed with 4% paraformaldehyde for 30 min at RT, permeabilized with 0.1% Triton X-100 for 10 min at RT then blocked with 10% goat serum for 30 min at RT. Cells were stained with ARG66330 anti-GAPDH antibody [SQab1878] (red) at 4°C. DAPI (blue) was used as the nuclear counter stain.



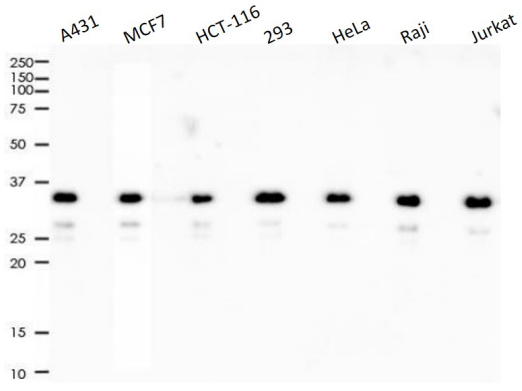
ARG66330 anti-GAPDH antibody [SQab1878] FACS image

Flow Cytometry: HeLa cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% TritonX-100 for 15 min. The were stained with ARG66330 anti-GAPDH antibody [SQab1878] (red) in 1x PBS/1% BSA for 30 min at RT, followed by Alexa Fluor® 488 labelled secondary antibody. Unlabelled sample (black) was used as a control. .



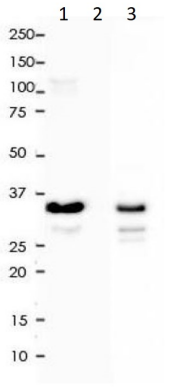
ARG66330 anti-GAPDH antibody [SQab1878] IHC-P image

Immunohistochemistry: Formalin-fixed and paraffin-embedded prostate cancer tissue stained with ARG66330 anti-GAPDH antibody [SQab1878]. Antigen Retrieval: Heat mediated was performed using Tris/EDTA buffer pH 9.0.



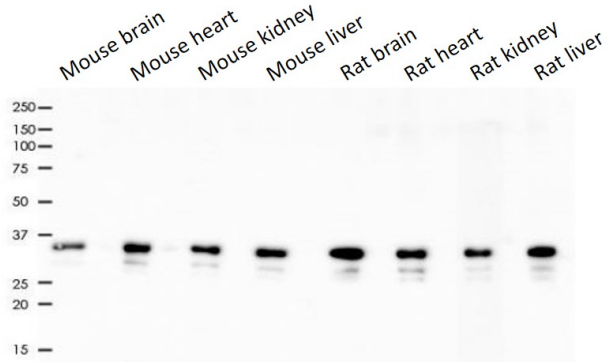
ARG66330 anti-GAPDH antibody [SQab1878] WB image

Western blot: 2 µg of A431, MCF7, HCT-116, 293, HeLa, Raji and Jurkat cell lysates stained with ARG66330 anti-GAPDH antibody [SQab1878].



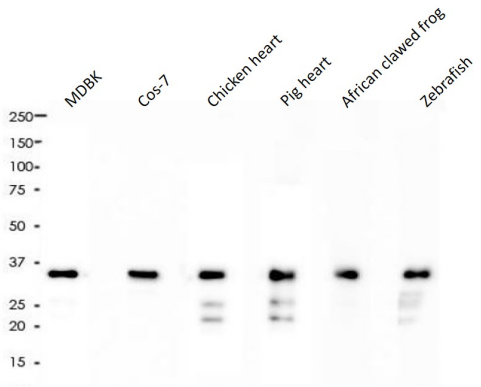
ARG66330 anti-GAPDH antibody [SQab1878] IP image

Immunoprecipitation: 0.1 mg of HeLa whole cell lysate immunoprecipitated and stained with ARG66330 anti-GAPDH antibody [SQab1878]. 1) ARG66330 IP in HeLa whole cell lysate, 2) PBS instead of ARG66330 in HeLa whole cell lysate, and 3) HeLa whole cell lysate, 2 µg (input).



ARG66330 anti-GAPDH antibody [SQab1878] WB image

Western blot: 2 µg of Mouse brain, Mouse heart, Mouse kidney, Mouse liver, Rat brain, Rat heart, Rat kidney and Rat liver lysates stained with ARG66330 anti-GAPDH antibody [SQab1878].



ARG66330 anti-GAPDH antibody [SQab1878] WB image

Western blot: 2 µg of MDBK, Cos-7, Chicken heart, Pig heart, African clawed frog and Zebrafish lysates stained with ARG66330 anti-GAPDH antibody [SQab1878].