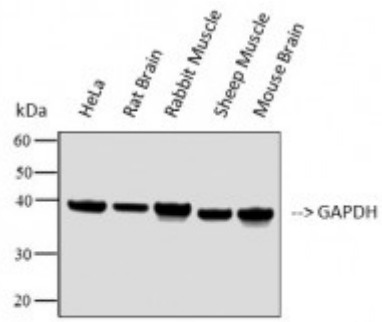
Anti-GAPDH antibody



Western Blot (WB) analysis of 1)HeLa, 2)Rat Brain, 3)Rabbit Muscle, 4)Sheep Muscle, and 5)Mouse Brain using GAPDH antibody(STJ96931), diluted at 1:10000.

Description	GAPDH is a protein encoded by the GAPDH gene which is approximately 36 kDa. It is localised to the cytoplasm and nucleus where it is involved in glucose metabolism, respiratory electron transport, carbon metabolism and HIF-1 signalling pathway. It is a moonlighting protein based on its ability to perform mechanistically distinct functions, which catalyses an important energy-yielding step in carbohydrate metabolism and also has both glyceraldehyde-3-phosphate dehydrogenase and nitrosylase activities, thereby playing a role in glycolysis and nuclear functions. GAPDH is expressed in the blood, eyes, intestine, kidney and liver. Mutations may result in FMR1-related disorders. STJ96931, monoclonal GAPDH antibody targets endogenous GAPDH, and was developed from clone 2B8.

Model	STJ96931
Host	Mouse
Reactivity	Bovine, Canine, Hamster, Human, Insect, Mouse, Rabbit, Rat, Sheep, Simian, Swine, Yeast
Applications	IF, IHC, WB
Immunogen	Synthetic peptide
Gene ID	2597
Gene Symbol	GAPDH
Dilution range	WB 1:5000IHC 1:200
Specificity	The antibody detects endogenous GAPDH protein.
Purification	The antibody was affinity-purified from mouse ascites by affinity-chromatography using GAPDH immunogen.

Clone ID	2B8
Note	For Research Use Only (RUO).
Protein Name	Glyceraldehyde-3-phosphate dehydrogenase GAPDH Peptidyl-cysteine S-nitrosylase GAPDH
Clonality	Monoclonal
Conjugation	Unconjugated
Isotype	IgG1
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:4141OMIM:138400
Alternative Names	Glyceraldehyde-3-phosphate dehydrogenase GAPDH Peptidyl-cysteine S-nitrosylase GAPDH
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. GAPDH modulates the organisation and assembly of the cytoskeleton, facilitating 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 catalyses 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 GAPDH 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.
Sequence and Domain Family	The [IL]-x-C-x-x-[DE] motif is a proposed target motif for cysteine S-nitrosylation mediated by the iNOS-S100A8/A9 transnitrosylase complex.
Cellular Localization	Cytoplasm, cytosol nucleus cytoplasm, perinuclear region membrane cytoplasm, cytoskeleton. Translocates to the nucleus following S-nitrosylation and interacts with SIAH1, which contains a nuclear localisation signal. Postnuclear and Perinuclear regions.
Post-translational Modifications	S-nitrosylation of Cys-152 leads to interaction with SIAH1, followed by translocation to the nucleus. 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.