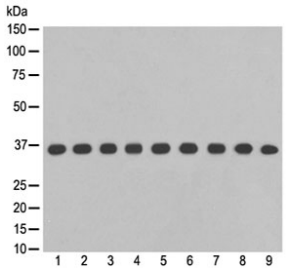
GAPDH Antibody / HRP Conjugate [clone A-7] (RQ4477)

Catalog No.	Formulation	Size
RQ4477	Antibody in PBS with 0.02% sodium azide, 50% glycerol and 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-2 weeks
Species Reactivity	Human, Mouse, Rat
Format	HRP Conjugate
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	A-7
Purity	Protein A affinity
UniProt	P04406
Localization	Cytoplasm, Nucleus, Membrane
Applications	Western Blot : 1:5000-1:20000
Limitations	This GAPDH antibody is available for research use only.



Western blot testing of 1) human Jurkat, 2) human A375, 3) human hippocampus, 4) human fetal liver, 5) monkey COS-1, 6) mouse RAW264.7, 7) mouse kidney, 8) rat PC-12 and 9) rat brain lysate with GAPDH antibody at 0.5ug/ml. Predicted molecular weight ~36 kDa.

Description

GAPDH antibody is a critical reagent for investigating cancer metabolism, glycolysis, and tumor biology. Glyceraldehyde 3 phosphate dehydrogenase (GAPDH) is an enzyme that catalyzes an essential glycolytic reaction, generating energy and biosynthetic precursors for cell growth. Its elevated expression in tumors reflects the metabolic reprogramming known as the Warburg effect, where cancer cells rely heavily on glycolysis even in oxygen rich conditions.

In cancer research, GAPDH serves both as a marker of metabolic state and as a reference protein in experimental assays. High expression of GAPDH supports biosynthetic demands of rapidly dividing cells and correlates with aggressiveness in certain cancers. The GAPDH antibody is therefore used to monitor expression changes under therapeutic interventions or metabolic stress.

Beyond cancer, GAPDH participates in apoptosis and autophagy, making it a multifunctional protein in cell fate regulation. Nuclear accumulation of GAPDH has been linked to pro apoptotic signaling during oxidative stress. Conversely, cytoplasmic GAPDH supports survival pathways, highlighting its dual role in promoting or inhibiting tumor progression depending on context.

Molecularly, GAPDH is a tetramer with NAD binding sites and conserved catalytic cysteine residues. Its enzymatic mechanism involves oxidation and phosphorylation reactions that are critical for maintaining glycolytic flux. This structural stability enables GAPDH antibody detection across different organisms and experimental systems.

The GAPDH antibody is widely used in western blotting, immunohistochemistry, ELISA, and immunofluorescence. These applications allow detection in tumor tissues, cell lines, and experimental models, providing insights into cancer metabolism and therapy resistance. For oncologists and molecular biologists, the GAPDH antibody is a specific and reliable tool. NSJ Bioreagents supplies validated antibodies that guarantee reproducibility and accuracy in advanced cancer research.

Application Notes

Optimal dilution of the GAPDH antibody should be determined by the researcher.

Immunogen

A synthetic peptide from human GAPDH was used as the immunogen for the GAPDH antibody.

Storage

Store the GAPDH antibody at -20oC.