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Glucose-6-phosphate isomerase Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1165a

Product Information

Application	WB, IHC, ICC, E
Primary Accession	P06744
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	1B7D7
Isotype	IgG1
Calculated MW	63147
Description	Glucose-6-phosphate isomerase, or phosphoglucose isomerase, also known as GPI. It belongs to the GPI family whose members encode multifunctional phosphoglucose isomerase proteins involved in energy pathways and it is an enzyme that catalyzes the conversion of glucose-6-phosphate into fructose 6-phosphate in the second step of glycolysis. The protein functions in different capacities inside and outside the cell. In the cytoplasm, the gene product is involved in glycolysis and gluconeogenesis, while outside the cell it functions as a neurotrophic factor for spinal and sensory neurons. Defects in GPI are the cause of nonspherocytic hemolytic anemia and a severe enzyme deficiency can be associated with hydrops fetalis, immediate neonatal death and neurological impairment.
Immunogen	Purified recombinant fragment of human GPI expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	2821
Other Names	Glucose-6-phosphate isomerase, GPI, 5.3.1.9, Autocrine motility factor, AMF, Neuroleukin, NLK, Phosphoglucose isomerase, PGI, Phosphohexose isomerase, PHI, Sperm antigen 36, SA-36, GPI
Dilution	WB~~1/500 - 1/2000 IHC~~1/500 - 1/2000 ICC~~N/A E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Glucose-6-phosphate isomerase Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GPI {ECO:0000303|PubMed:2387591, ECO:0000312|HGNC:HGNC:4458}
Function	Isomerase that catalyzes the conversion of alpha-D-glucose-6- phosphate to beta-D-fructose-6-phosphate, the second step in glycolysis, and the reverse reaction in gluconeogenesis, within the cytoplasm (PubMed:28803808). Also shows C2-epimerase activity, interconverting D-glucose-6-phosphate (G6P) and D-mannose-6-phosphate (M6P) (By similarity). Also displays anomerase activity, interconverting alpha and beta-anomeric forms of G6P, D-fructose-6-phosphate and M6P (By similarity). In addition to its metabolic role, this enzyme functions extracellularly as a cytokine: acts as autocrine motility factor (AMF), a secreted angiogenic factor that enhances endothelial cell motility (PubMed:11437381). Functions as neuroleukin, a neurotrophic factor supporting the survival of spinal and sensory neurons (PubMed:11004567, PubMed:3352745). Released by lectin- stimulated T-cells to induce immunoglobulin secretion (PubMed:11004567, PubMed:3352745).
Cellular Location	Cytoplasm. Secreted

References

1. Biochem Biophys Res Commun. 2004 Oct 15;323(2):518-22. 2. Biochem Biophys Res Commun. 2006 Oct 20;349(2):838-45. 3. Hum Mutat. 2006 Nov;27(11):1159. 4. Leuk Lymphoma. 2006 Oct;47(10):2234-43.

Images

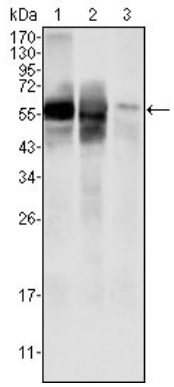


Figure 1: Western blot analysis using GPI mouse mAb against HepG2 (1) , SMMC-7721 (2) cell lysate and rat liver tissues lysate (3).

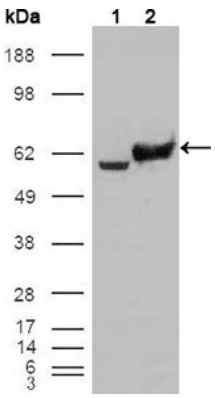
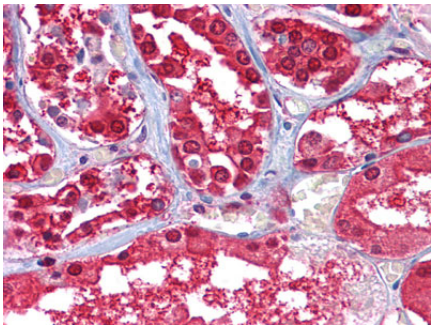


Figure 2: Western blot analysis using GPI mouse mAb against HEK293T cells transfected with the pCMV6-ENTRY control (1) and pCMV6-ENTRY GPI cDNA (2).

Figure 3: Immunohistochemical analysis of paraffin-embedded human Kidney tissues using GPI mouse mAb.



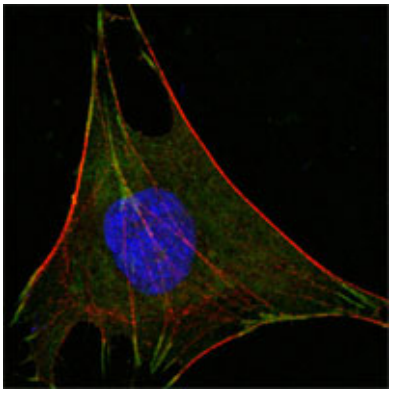


Figure 4: Confocal immunofluorescence analysis of L-02 cells using GPI mouse mAb (green). Red: Actin filaments have been labeled with DY-554 phalloidin. Blue: DRAQ5 fluorescent DNA dye.