PGAM5 Antibody / Phosphoglycerate mutase family member 5 (FY13196)

Catalog No.	Formulation	Size
FY13196	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q96HS1
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This PGAM5 antibody is available for research use only.

Description

PGAM5 antibody detects Phosphoglycerate mutase family member 5, a mitochondrial serine/threonine phosphatase involved in apoptosis, mitophagy, and stress-induced signal transduction. The UniProt recommended name is Phosphoglycerate mutase family member 5 (PGAM5). Despite its name, PGAM5 lacks mutase activity and instead functions as a protein phosphatase that regulates mitochondrial dynamics and cellular stress responses.

Functionally, PGAM5 antibody identifies a 289-amino-acid mitochondrial protein localized to the outer mitochondrial membrane. PGAM5 acts downstream of the MAP3K5-ASK1 signaling axis, dephosphorylating substrates that mediate programmed necrosis and mitophagy. It interacts with proteins such as KEAP1, DRP1, and BCL-XL, influencing mitochondrial fission, redox homeostasis, and apoptosis regulation. By modulating DRP1 phosphorylation, PGAM5 facilitates mitochondrial fragmentation during stress-induced cell death and promotes removal of damaged mitochondria through autophagic processes.

The PGAM5 gene is located on chromosome 12q24.33 and is expressed in metabolically active tissues, including liver, brain, and skeletal muscle. Through its phosphatase activity, PGAM5 integrates oxidative stress signals with

mitochondrial quality control, acting as a central node in determining cell fate under energy or redox imbalance.

Pathologically, dysregulation of PGAM5 contributes to neurodegenerative diseases, ischemia-reperfusion injury, and cancer. In neurons, excessive PGAM5 activation leads to mitochondrial fragmentation and cell death, while reduced expression impairs mitophagy and promotes accumulation of damaged mitochondria. In cancer cells, PGAM5 modulates metabolism and apoptosis sensitivity, linking mitochondrial signaling to tumor progression. Research using PGAM5 antibody supports studies in mitochondrial biology, apoptosis, and stress adaptation pathways.

PGAM5 antibody is validated for western blotting, immunohistochemistry, and immunofluorescence to detect mitochondrial phosphatases and regulators of cell death. NSJ Bioreagents provides PGAM5 antibody reagents optimized for use in apoptosis signaling, redox regulation, and neurobiology research.

Structurally, Phosphoglycerate mutase family member 5 contains a C-terminal catalytic domain with a histidine phosphatase motif (His-Arg-Ser) and an N-terminal transmembrane anchor that tethers it to the outer mitochondrial membrane. The active site structure enables PGAM5 to recognize phosphorylated substrates associated with mitochondrial fission machinery. This antibody facilitates exploration of PGAM5’s role in mitochondrial remodeling, necroptosis, and energy metabolism.

Application Notes

Optimal dilution of the PGAM5 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PGAM5 recombinant protein (Position: D63-L252) was used as the immunogen for the PGAM5 antibody.

Storage

After reconstitution, the PGAM5 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.