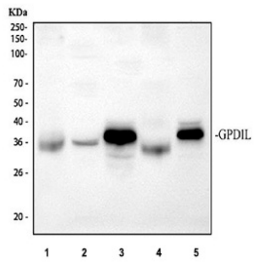
GPD1L Antibody / Glycerol-3-phosphate dehydrogenase 1-like protein (RQ5044)

Catalog No.	Formulation	Size
RQ5044	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q8N335
Applications	Western blot: 0.5-1ug/ml Direct ELISA: 0.1-0.5ug/ml
Limitations	This GPD1L antibody is available for research use only.



Western blot analysis using GPD1L antibody. Lane 1: human PC-3 whole cell lysates; Lane 2: human U87 whole cell lysates; Lane 3: rat heart tissue lysates; Lane 4: rat skeletal muscle tissue lysates; Lane 5: mouse heart tissue lysates. The predicted molecular weight of Glycerol-3-phosphate dehydrogenase 1-like protein is ~38 kDa, and bands are observed between ~35-40 kDa, with expected stronger expression in heart tissue.

Description

GPD1L antibody targets Glycerol-3-phosphate dehydrogenase 1-like protein, encoded by the GPD1L gene. GPD1L is a cytosolic enzyme that is structurally related to glycerol-3-phosphate dehydrogenase and participates in cellular redox balance and metabolic regulation. Although closely related to classical glycerol-3-phosphate dehydrogenases, GPD1L has distinct regulatory roles and is not considered a primary glycolytic enzyme. Its activity links cellular metabolism with redox-sensitive signaling pathways and protein regulation.

Functionally, Glycerol-3-phosphate dehydrogenase 1-like protein has been shown to influence intracellular NADH and NAD+ balance and modulate downstream signaling processes. One well-characterized role of GPD1L is its regulation of ion channel function through redox-dependent mechanisms, particularly affecting sodium channel activity. Through these actions, GPD1L serves as a metabolic sensor that connects cellular energy state to electrophysiological and signaling outcomes. A GPD1L antibody supports studies focused on metabolic regulation and redox-dependent signaling.

GPD1L is expressed in multiple tissues, with notable relevance in cardiac tissue and other metabolically active cells. Expression patterns reflect its involvement in maintaining cellular homeostasis under varying metabolic conditions. GPD1L can interact directly or indirectly with signaling proteins and channels, enabling fine control of cellular responses to metabolic stress. These interactions position GPD1L at the intersection of metabolism, signaling, and cellular excitability.

From a disease-relevance perspective, GPD1L has been strongly associated with cardiac arrhythmia syndromes. Mutations in GPD1L have been linked to Brugada syndrome and sudden cardiac death, where altered regulation of cardiac sodium channels leads to impaired electrical conduction. GPD1L dysfunction has also been investigated in the context of metabolic stress responses and hypoxia-related signaling, expanding its relevance beyond cardiac physiology. These associations make GPD1L an important target for studies of metabolism-linked disease mechanisms.

At the molecular level, Glycerol-3-phosphate dehydrogenase 1-like protein contains conserved enzymatic motifs and regulatory regions that enable interaction with cofactors and partner proteins. Post-translational modifications and cellular redox state can influence its activity and apparent behavior on SDS-PAGE without implying changes in primary sequence. A GPD1L antibody supports research applications focused on metabolic signaling, redox regulation, and disease-associated alterations in cellular homeostasis, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the GPD1L antibody should be determined by the researcher.

Immunogen

Amino acids A19-T351 from the human protein were used as the immunogen for the GPD1L antibody.

Storage

After reconstitution, the GPD1L antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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