Anti-GPD2 Antibody [PSH0-31]

HA721311

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	WB, FC
Molecular Wt:	Predicted band size: 81 kDa
Clone number:	PSH0-31

Description: Mitochondrial glycerol-3-phosphate dehydrogenase (GPD2), catalyzes the irreversible oxidation of glycerol-3-phosphate to dihydroxyacetone phosphate and concomitantly transfers two electrons from FAD to the electron transport chain. GPD2 consists of 4 identical subunits. Studies indicate that GPDH is mostly unaffected by pH changes: neither GPD1 or GPD2 is favored under certain pH conditions. At high salt concentrations (E.g. NaCl), GPD1 activity is enhanced over GPD2, since an increase in the salinity of the medium leads to an accumulation of glycerol in response. Changes in temperature do not appear to favor neither GPD1 nor GPD2. The fundamental role of GPDH in maintaining the NAD+/NADH potential, as well as its role in lipid metabolism, makes GPDH a factor in lipid imbalance diseases, such as obesity. Enhanced GPDH activity, particularly GPD2, leads to an increase in glycerol production. Since glycerol is a main subunit in lipid metabolism, its abundance can easily lead to an increase in triglyceride accumulation at a cellular level. As a result, there is a tendency to form adipose tissue leading to an accumulation of fat that favors obesity. GPDH has also been found to play a role in Brugada syndrome. Mutations in the gene encoding GPD1 have been proven to cause defects in the electron transport chain. This conflict with NAD+/NADH levels in the cell is believed to contribute to defects in cardiac sodium ion channel regulation and can lead to a lethal arrythmia during infancy.

Immunogen:	Recombinant protein within Human GPD2 aa 43-727.
Positive control:	MCF-7 cell lysate, THP-1 cell lysate, U87-MG cell lysate, HeLa cell lysate, Hela cell.
Subcellular location:	Mitochondrion.
Database links:	SwissProt: P43304 Human
Recommended Dilutions:	
WB	1:1,000
FC	1:1,000
Storage Buffer:	PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.
Storage Instruction:	Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.
Purity:	Protein A affinity purified.

Images

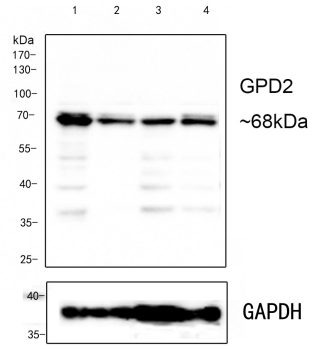

Fig1: Western blot analysis of GPD2 on different lysates with Rabbit anti-GPD2 antibody (HA721311) at 1/1,000 dilution.

Lane 1: MCF-7 cell lysate
Lane 2: THP-1 cell lysate
Lane 3: U87-MG cell lysate
Lane 4: HeLa cell lysate

Lysates/proteins at 10 µg/Lane.

Predicted band size: 81 kDa
Observed band size: 68 kDa

Exposure time: 10s;

10% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA721311) at 1/1,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:200,000 dilution was used for 1 hour at room temperature.

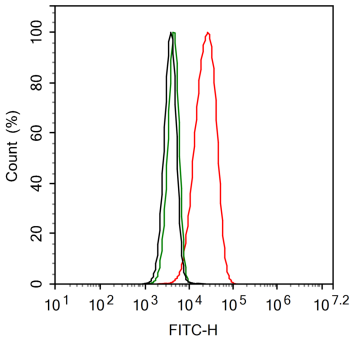

Fig2: Flow cytometric analysis of Hela cells labeling GPD2.

Cells were fixed and permeabilized. Then stained with the primary antibody (HA721311, 1ug/ml) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4℃ for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4℃. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Background References

1. Novials A. et al. 1997 Mutation in the calcium-binding domain of the mitochondrial glycerophosphate dehydrogenase gene in a family of diabetic subjects. Biochem Biophys Res Commun. Feb 24;231(3):570-2.
2. Kota V, Dhople VM, Shivaji S (Apr 2009). "Tyrosine phosphoproteome of hamster spermatozoa: role of glycerol-3-phosphate dehydrogenase 2 in sperm capacitation". Proteomics. 9 (7): 1809–26.