

# GPD1 (C-18): sc-161677

## BACKGROUND

Voltage-gated sodium channels drive the initial depolarization phase of the cardiac action potential, therefore, critically determine conduction of excitation through the heart. As a member of the NAD-dependent glycerol-3-phosphate dehydrogenase family, glycerol-3-phosphate dehydrogenase 1 (GPD1) is a 349 amino acid cytoplasmic protein that catalyzes the formation of glycerone phosphate and NADH from sn-glycerol 3-phosphate and NAD<sup>+</sup>. Inhibited by zinc ions and sulfate, GPD1 exists as a homodimer and may have similar functions as GPD1L (glycerol-3 phosphate dehydrogenase-1 like). GPD1L is thought to affect trafficking of the cardiac sodium current to the cell surface and mutations in the gene encoding GPD1L are thought to be involved in sudden infant death syndrome (SIDS).

## REFERENCES

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- Albertyn, J., et al. 1994. GPD1, which encodes glycerol-3-phosphate dehydrogenase, is essential for growth under osmotic stress in *Saccharomyces cerevisiae*, and its expression is regulated by the high-osmolarity glycerol response pathway. *Mol. Cell. Biol.* 14: 4135-4144.
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- Ou, X., et al. 2006. Crystal structures of human glycerol 3-phosphate dehydrogenase 1 (GPD1). *J. Mol. Biol.* 357: 858-869.
- Park, J.J., et al. 2006. GRB14, GPD1, and GDF8 as potential network collaborators in weight loss-induced improvements in Insulin action in human skeletal muscle. *Physiol. Genomics* 27: 114-121.
- Van Norstrand, D.W., et al. 2007. Molecular and functional characterization of novel glycerol-3-phosphate dehydrogenase 1 like gene (GPD1-L) mutations in sudden infant death syndrome. *Circulation* 116: 2253-2259.
- Makiyama, T., et al. 2008. Mutation analysis of the glycerol-3 phosphate dehydrogenase-1 like (GPD1L) gene in Japanese patients with Brugada syndrome. *Circ. J.* 72: 1705-1706.

## CHROMOSOMAL LOCATION

Genetic locus: GPD1 (human) mapping to 12q13.12; Gpd1 (mouse) mapping to 15 F1.

## SOURCE

GPD1 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GPD1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-161677 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GPD1 (C-18) is recommended for detection of GPD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with GPD1L or GPD2.

GPD1 (C-18) is also recommended for detection of GPD1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for GPD1 siRNA (h): sc-95691, GPD1 siRNA (m): sc-145683, GPD1 shRNA Plasmid (h): sc-95691-SH, GPD1 shRNA Plasmid (m): sc-145683-SH, GPD1 shRNA (h) Lentiviral Particles: sc-95691-V and GPD1 shRNA (m) Lentiviral Particles: sc-145683-V.

Molecular Weight (predicted) of GPD1: 38 kDa.

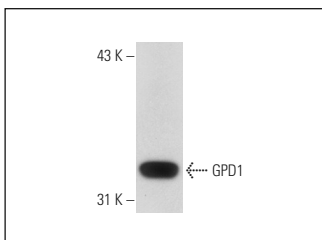
Molecular Weight (observed) of GPD1: 37-43 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or GPD1 (h): 293T lysate: sc-114223.

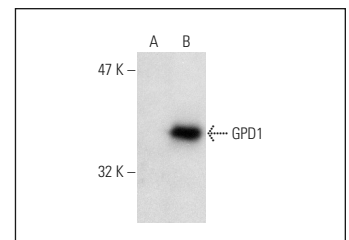
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



GPD1 (C-18): sc-161677. Western blot analysis of GPD1 expression in Hep G2 whole cell lysate.



GPD1 (C-18): sc-161677. Western blot analysis of GPD1 expression in non-transfected: sc-117752 (A) and human GPD1 transfected: sc-114223 (B) 293T whole cell lysates.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.