SANTA CRUZ BIOTECHNOLOGY, INC.

GPD1 (H-10): sc-393161

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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^+. 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

1. Gwynn, B., et al. 1990. Sequence conservation and structural organization of the glycerol-3-phosphate dehydrogenase promoter in mice and humans. Mol. Cell. Biol. 10: 5244-5256.
2. 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.
3. Lin, H., et al. 2002. Phospholipase C interacts with Sgd1p and is required for expression of GPD1 and osmoresistance in *Saccharomyces cerevisiae.* Mol. Genet. Genomics 267: 313-320.
4. Ou, X., et al. 2006. Crystal structures of human glycerol 3-phosphate dehydrogenase 1 (GPD1). J. Mol. Biol. 357: 858-869.
5. 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.

CHROMOSOMAL LOCATION

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

SOURCE

GPD1 (H-10) is a mouse monoclonal antibody raised against amino acids 300-349 mapping at the C-terminus of GPD1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GPD1 (H-10) is available conjugated to agarose (sc-393161 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393161 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393161 PE), fluorescein (sc-393161 FITC), Alexa Fluor® 488 (sc-393161 AF488), Alexa Fluor® 546 (sc-393161 AF546), Alexa Fluor® 594 (sc-393161 AF594) or Alexa Fluor® 647 (sc-393161 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393161 AF680) or Alexa Fluor® 790 (sc-393161 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GPD1 (H-10) is recommended for detection of GPD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

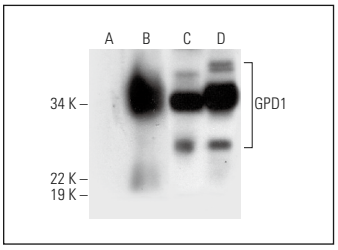
Molecular Weight (observed) of GPD1: 37-43 kDa.

Positive Controls: GPD1 (h): 293T Lysate: sc-114223, mouse liver extract: sc-2256 or human liver extract: sc-363766.

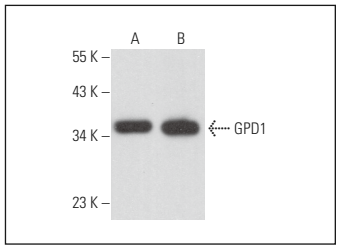
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GPD1 (H-10): sc-393161. Western blot analysis of GPD1 expression in non-transfected: sc-117752 (**A**) and human GPD1 transfected: sc-114223 (**B**) 293T whole cell lysates and mouse liver (**C**) and human liver (**D**) tissue extracts.



GPD1 (H-10): sc-393161. Western blot analysis of GPD1 expression in Hep G2 whole cell lysate (**A**) and rat thymus tissue extract (**B**).

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.