

GPD1L (E-17): sc-102569

BACKGROUND

Voltage-gated sodium channels drive the initial depolarization phase of the cardiac action potential and, 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 like (GPD1L) is a 351 amino acid protein that catalyzes the formation of glycerone phosphate and NADH from Sn-glycerol 3-phosphate and NAD⁺. GPD1L is thought to affect trafficking of the cardiac sodium current to the cell surface. With highest expression in the heart, mutations in the gene encoding GPD1L contribute to a small percentage of Brugada syndrome type 2 (BRS2) cases, an autosomal dominant cardiac disease characterized by a right bundle branch block and ST elevation, resulting in ventricular fibrillation. GPD1L gene mutations are also thought to contribute to sudden infant death syndrome (SIDS).

REFERENCES

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2. Grant, A.O. 2001. Molecular biology of sodium channels and their role in cardiac arrhythmias. *Am. J. Med.* 110: 296-305.
3. Papadatos, G.A., et al. 2002. Slowed conduction and ventricular tachycardia after targeted disruption of the cardiac sodium channel gene *Scn5a*. *Proc. Natl. Acad. Sci. USA* 99: 6210-6215.
4. Clancy, C.E., et al. 2002. Na⁺ channel mutation that causes both Brugada and long-QT syndrome phenotypes: a simulation study of mechanism. *Circulation* 105: 1208-1213.
5. 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.
6. London, B., et al. 2007. Mutation in glycerol-3-phosphate dehydrogenase 1 like gene (GPD1-L) decreases cardiac Na⁺ current and causes inherited arrhythmias. *Circulation* 116: 2260-2268.
7. 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: GPD1L (human) mapping to 3p22.3.

SOURCE

GPD1L (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GPD1L 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-102569 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GPD1L (E-17) is recommended for detection of GPD1L of 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 family members GPD1 or GPD2.

GPD1L (E-17) is also recommended for detection of GPD1L in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GPD1L siRNA (h): sc-78210, GPD1L shRNA Plasmid (h): sc-78210-SH and GPD1L shRNA (h) Lentiviral Particles: sc-78210-V.

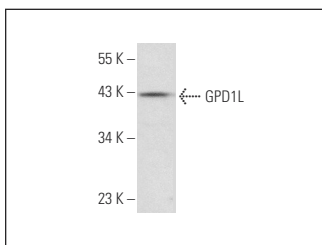
Molecular Weight of GPD1L: 38 kDa.

Positive Controls: RT-4 whole cell lysate: sc-364257.

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



GPD1L (E-17): sc-102569. Western blot analysis of GPD1L expression in RT-4 whole cell lysate.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.