GPD1 (m): 293T Lysate: sc-120581



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 glycer-ol-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

- Gwynn, B., Lyford, K.A. and Birkenmeier, E.H. 1990. Sequence conservation and structural organization of the glycerol-3-phosphate dehydrogenase promoter in mice and humans. Mol. Cell. Biol. 10: 5244-5256.
- Albertyn, J., Hohmann, S., Thevelein, J.M. and Prior, B.A. 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., Nguyen, P. and Vancura, A. 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., Ji, C., Han, X., Zhao, X., Li, X., Mao, Y., Wong, L.L., Bartlam, M. and Rao, Z. 2006. Crystal structures of human glycerol 3-phosphate dehydrogenase 1 (GPD1). J. Mol. Biol. 357: 858-869.
- Park, J.J., Berggren, J.R., Hulver, M.W., Houmard, J.A. and Hoffman, E.P. 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., Valdivia, C.R., Tester, D.J., Ueda, K., London, B., Makielski, J.C. and Ackerman, M.J. 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., Akao, M., Haruna, Y., Tsuji, K., Doi, T., Ohno, S., Nishio, Y., Kita, T. and Horie, M. 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 (mouse) mapping to 15 F1.

PRODUCT

GPD1 (m): 293T Lysate represents a lysate of mouse GPD1 transfected 293T cells and is provided as 100 μg protein in 200 μl SDS-PAGE buffer.

APPLICATIONS

GPD1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive GPD1 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.

Santa Cruz Biotechnology, Inc. 1.800.457.3801 831.457.3800 fax 831.457.3801 Europe +00800 4573 8000 49 6221 4503 0 www.scbt.com