SANTA CRUZ BIOTECHNOLOGY, INC.

3PGDH (B-3): sc-393283

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The survival and development of central neurons require the supply of trophic factors by glial cells. The trophic actions of glial cells on Purkinje neurons are mediated by L-serine and glycine, which are glia-derived trophic factors synthesized by 3PGDH. 3PGDH protein is 544 amino acids in length. Two distinct mRNA transcripts that encode for 3PGDH protein in normal human tissues are dominant 2.1 kb mRNA, which is highly expressed in prostate, testis, ovary, brain, liver, kidney, and pancreas, and weakly expressed in thymus, colon, and heart, and 710 bp mRNA, which is highly expressed in heart and skeletal muscle. 3PGDH is regulated at the transcriptional level depending on tissue specificity and cellular proliferative status. 3PGDH protein is also highly expressed in adult and fetal brain tissues. 3PGDH protein plays an important role in the metabolism, development, and function of the central nervous system and its deficiency is a treatable congential error that impairs L-serine biosynthesis which is characterized by congenital microcephaly, psychomotor retardation, and seizures.

REFERENCES

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4. Klomp, L.W., de Koning, T.J., Malingre, H.E., van Beurden, E.A., Brink, M., Opdam, F.L., Duran, M., Jaeken, J., Pineda, M., van Maldergem, L., Poll-The, B.T., van Den Berg, I.E. and Berger, R. 2000. Molecular characterization of 3-phosphoglycerate dehydrogenase deficiency—a neurometabolic disorder associated with reduced L-serine biosynthesis. Am. J. Hum. Genet. 67: 1389-1399.
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CHROMOSOMAL LOCATION

Genetic locus: PHGDH (human) mapping to 1p12; Phgdh (mouse) mapping to 3 F2.2.

SOURCE

3PGDH (B-3) is a mouse monoclonal antibody raised against amino acids 260-533 mapping at the C-terminus of 3PGDH of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

3PGDH (B-3) is recommended for detection of 3PGDH 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 3PGDH siRNA (h): sc-105011, 3PGDH siRNA (m): sc-108938, 3PGDH shRNA Plasmid (h): sc-105011-SH, 3PGDH shRNA Plasmid (m): sc-108938-SH, 3PGDH shRNA (h) Lentiviral Particles: sc-105011-V and 3PGDH shRNA (m) Lentiviral Particles: sc-108938-V.

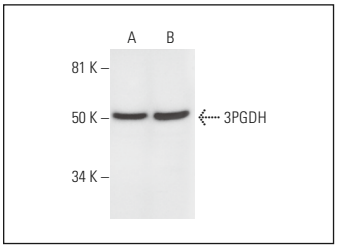
Molecular Weight of 3PGDH: 57 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233 or Jurkat whole cell lysate: sc-2204.

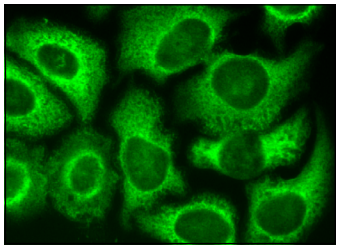
RECOMMENDED SUPPORT REAGENTS

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



3PGDH (B-3): sc-393283. Western blot analysis of 3PGDH expression in MOLT-4 (**A**) and Jurkat (**B**) whole cell lysates.



3PGDH (B-3): sc-393283. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

STORAGE

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

PROTOCOLS

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