

# 3PGDH (B-1): sc-390610

## 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 congenital error that impairs L-serine biosynthesis which is characterized by congenital microcephaly, psychomotor retardation, and seizures.

## REFERENCES

- de Koning, T.J., et al. 1998. Beneficial effects of L-serine and glycine in the management of seizures in 3-phosphoglycerate dehydrogenase deficiency. *Ann. Neurol.* 44: 261-265.
- Shigeki, F., et al. 2000. L-serine and glycine serve as major astroglia-derived trophic factors for cerebellar Purkinje neurons. *Proc. Natl. Acad. Sci. USA* 97: 11528-11533.
- Cho, H.M., et al. 2000. Nucleotide sequence and differential expression of the human 3-phosphoglycerate dehydrogenase gene. *Gene* 245: 193-201.

## CHROMOSOMAL LOCATION

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

## SOURCE

3PGDH (B-1) is a mouse monoclonal antibody raised against amino acids 260-533 mapping at the C-terminus of 3PGDH of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

3PGDH (B-1) is available conjugated to agarose (sc-390610 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390610 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390610 PE), fluorescein (sc-390610 FITC), Alexa Fluor<sup>®</sup> 488 (sc-390610 AF488), Alexa Fluor<sup>®</sup> 546 (sc-390610 AF546), Alexa Fluor<sup>®</sup> 594 (sc-390610 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-390610 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-390610 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-390610 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

3PGDH (B-1) 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.

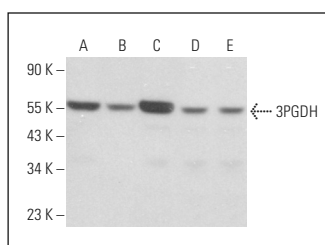
Molecular Weight of 3PGDH: 57 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, CCRF-CEM cell lysate: sc-2225 or Hep G2 cell lysate: sc-2227.

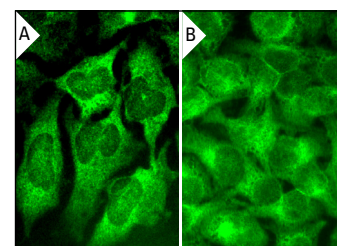
## RECOMMENDED SUPPORT REAGENTS

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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



3PGDH (B-1): sc-390610. Western blot analysis of 3PGDH expression in Jurkat (A), CCRF-CEM (B), Hep G2 (C), c4 (D) and AMJ2-C8 (E) whole cell lysates.



3PGDH (B-1): sc-390610. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunofluorescence staining of formalin-fixed HeLa cells showing cytoplasmic and cell surface localization (B).

## SELECT PRODUCT CITATIONS

- Hamza, M.S., et al. 2021. Glucose and fatty acid metabolism involved in the protective effect of metformin against ulipristal-induced endometrial changes in rats. *Sci. Rep.* 11: 8863.

## STORAGE

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