

GLDC (H-9): sc-376196

BACKGROUND

The glycine cleavage system is comprised of AMT (known as Protein T), GCSH (known as Protein H), DLD (known as Protein L) and GLDC (known as Protein P), all of which work together to catalyze the cleavage and degradation of glycine. GLDC (glycine dehydrogenase), also known as GCE, GCSP (glycine cleavage system P protein) or HYGN1, is a 1,020 amino acid protein that localizes to the mitochondria and belongs to the gcvP family. GLDC binds to glycine and enables the methylamine group from glycine to be transferred to the Protein T. GLDC exists as a homodimer and utilizes pyridoxal phosphate as a cofactor. Mutations in the gene encoding GLDC leads to nonketotic hyperglycinemia (NKH), also known as glycine encephalopathy (GCE), an autosomal recessive disease characterized by accumulation of a large amount of glycine in body fluid and by severe neurological symptoms.

REFERENCES

1. Takayanagi, M., et al. 2000. Human glycine decarboxylase gene (GLDC) and its highly conserved processed pseudogene (psiGLDC): their structure and expression, and the identification of a large deletion in a family with nonketotic hyperglycinemia. *Hum. Genet.* 106: 298-305.
2. Kure, S., et al. 2002. Heterozygous GLDC and GCSH gene mutations in transient neonatal hyperglycinemia. *Ann. Neurol.* 52: 643-646.
3. Toone, J.R., et al. 2002. Novel mutations in the P-protein (glycine decarboxylase) gene in patients with glycine encephalopathy (non-ketotic hyperglycinemia). *Mol. Genet. Metab.* 76: 243-249.

CHROMOSOMAL LOCATION

Genetic locus: GLDC (human) mapping to 9p24.1; Gldc (mouse) mapping to 19 C1.

SOURCE

GLDC (H-9) is a mouse monoclonal antibody raised against amino acids 256-555 mapping within an internal region of GLDC of human origin.

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.

GLDC (H-9) is available conjugated to agarose (sc-376196 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376196 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376196 PE), fluorescein (sc-376196 FITC), Alexa Fluor® 488 (sc-376196 AF488), Alexa Fluor® 546 (sc-376196 AF546), Alexa Fluor® 594 (sc-376196 AF594) or Alexa Fluor® 647 (sc-376196 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376196 AF680) or Alexa Fluor® 790 (sc-376196 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

GLDC (H-9) is recommended for detection of GLDC 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), immunohistochemistry (including paraffin-embedded sections) (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 GLDC siRNA (h): sc-92873, GLDC siRNA (m): sc-145419, GLDC shRNA Plasmid (h): sc-92873-SH, GLDC shRNA Plasmid (m): sc-145419-SH, GLDC shRNA (h) Lentiviral Particles: sc-92873-V and GLDC shRNA (m) Lentiviral Particles: sc-145419-V.

Molecular Weight of GLDC: 113 kDa.

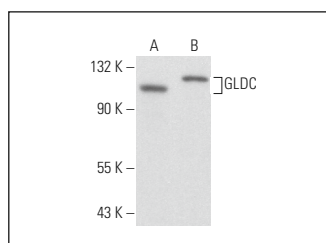
Positive Controls: c4 whole cell lysate: sc-364186, Hep G2 cell lysate: sc-2227 or ACHN whole cell lysate: sc-364365.

RECOMMENDED SUPPORT REAGENTS

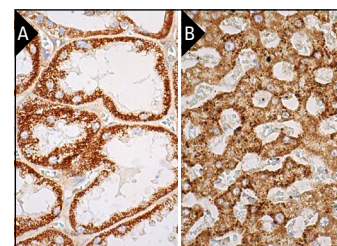
To ensure optimal results, the following support reagents are recommended:

- 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.
- 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



GLDC (H-9): sc-376196. Western blot analysis of GLDC expression in ACHN (A) and c4 (B) whole cell lysates.



GLDC (H-9): sc-376196. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes (B).

SELECT PRODUCT CITATIONS

1. Abdollahi, P., et al. 2021. Phosphatase of regenerating liver-3 regulates cancer cell metabolism in multiple myeloma. *FASEB J.* 35: e21344.

RESEARCH USE

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