SANTA CRUZ BIOTECHNOLOGY, INC.

DMGDH (C-9): sc-398257

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

DMGDH (dimethylglycine dehydrogenase), also known as ME2GLYDH or DMGDHD, is an 866 amino acid mitochondrial protein that plays a role in choline catabolism by catalyzing the demethylation of dimethylglycine to form sarcosine. Existing as a monomer that belongs to the gcvT family, DMGDH utilizes flavin adenine dinucleotide (FAD) and folate as cofactors. DMGDH is encoded by a gene that maps to human chromosome 5q14.1, defects of which are the cause of DMGDH deficiency (DMGDHD). Patients with DMGDHD experience muscle fatigue, have a fish-like odor and excrete an elevated level of N,N-dimethylglycine (DMG) in urine.

REFERENCES

1. Lang, H., Polster, M. and Brandsch, R. 1991. Rat liver dimethylglycine dehydrogenase. Flavinylation of the enzyme in hepatocytes in primary culture and characterization of a cDNA clone. Eur. J. Biochem. 198: 793-799.
2. Lang, H., Minaian, K., Freudenberg, N., Hoffmann, R. and Brandsch, R. 1994. Tissue specificity of rat mitochondrial dimethylglycine dehydrogenase expression. Biochem. J. 299: 393-398.
3. Moolenaar, S.H., Poggi-Bach, J., Engelke, U.F., Corstiaensen, J.M., Heerschap, A., de Jong, J.G., Binzak, B.A., Vockley, J. and Wevers, R.A. 1999. Defect in dimethylglycine dehydrogenase, a new inborn error of metabolism: NMR spectroscopy study. Clin. Chem. 45: 459-464.
4. Binzak, B.A., Vockley, J.G., Jenkins, R.B. and Vockley, J. 2000. Structure and analysis of the human dimethylglycine dehydrogenase gene. Mol. Genet. Metab. 69: 181-187.
5. Binzak, B.A., Wevers, R.A., Moolenaar, S.H., Lee, Y.M., Hwu, W.L., Poggi-Bach, J., Engelke, U.F., Hoard, H.M., Vockley, J.G. and Vockley, J. 2001. Cloning of dimethylglycine dehydrogenase and a new human inborn error of metabolism, dimethylglycine dehydrogenase deficiency. Am. J. Hum. Genet. 68: 839-847.
6. Online Mendelian Inheritance in Man, OMIM™. 2010. Johns Hopkins University, Baltimore, MD. MIM Number: 605850. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: DMGDH (human) mapping to 5q14.1.

SOURCE

DMGDH (C-9) is a mouse monoclonal antibody raised against amino acids 124-271 mapping within an internal region of DMGDH of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

DMGDH (C-9) is recommended for detection of DMGDH of 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 DMGDH siRNA (h): sc-91618, DMGDH shRNA Plasmid (h): sc-91618-SH and DMGDH shRNA (h) Lentiviral Particles: sc-91618-V.

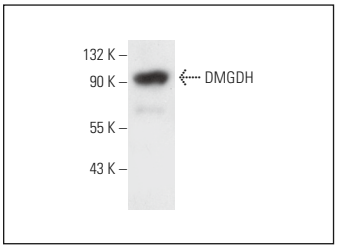
Molecular Weight of DMGDH: 97 kDa.

Positive Controls: human liver extract: sc-363766 or human fetal liver tissue extract.

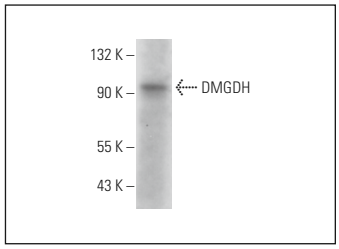
RECOMMENDED SUPPORT REAGENTS

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



DMGDH (C-9): sc-398257. Western blot analysis of DMGDH expression in human liver tissue extract.



DMGDH (C-9): sc-398257. Western blot analysis of DMGDH expression in human fetal liver tissue extract.

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.