

GNMT (A-4): sc-166834

BACKGROUND

Glycine N-methyltransferase (GNMT) is a 295 amino acid protein that catalyzes the methylation of glycine by using S-adenosylmethionine (AdoMet) to form N-methylglycine (sarcosine) with the concomitant production of S-adenosylhomocysteine (AdoHcy). This process indicates that GNMT probably plays a crucial role in the regulation of tissue concentration of AdoMet and in the metabolism of methionine. Originally identified as a methyl donor, AdoMet is now considered a key metabolite that regulates hepatocyte growth, death and differentiation. Biosynthesis of AdoMet occurs in all mammalian cells as the first step in methionine catabolism in a reaction catalyzed by methionine adenosyltransferase (MAT). Decreased hepatic AdoMet biosynthesis is a consequence of all forms of chronic liver injury. In chronic liver AdoMet deficiency, the liver is predisposed to further injury and can develop spontaneous steatohepatitis and hepatocellular carcinoma. However, impaired AdoMet metabolism, which occurs in patients with mutations of GNMT, can also lead to liver injury.

CHROMOSOMAL LOCATION

Genetic locus: GNMT (human) mapping to 6p21.1.

SOURCE

GNMT (A-4) is a mouse monoclonal antibody raised against amino acids 71-295 mapping at the C-terminus of GNMT of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GNMT (A-4) is available conjugated to agarose (sc-166834 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166834 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166834 PE), fluorescein (sc-166834 FITC), Alexa Fluor® 488 (sc-166834 AF488), Alexa Fluor® 546 (sc-166834 AF546), Alexa Fluor® 594 (sc-166834 AF594) or Alexa Fluor® 647 (sc-166834 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166834 AF680) or Alexa Fluor® 790 (sc-166834 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GNMT (A-4) is recommended for detection of glycine N-methyltransferase 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), 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 GNMT siRNA (h): sc-62391, GNMT shRNA Plasmid (h): sc-62391-SH and GNMT shRNA (h) Lentiviral Particles: sc-62391-V.

Molecular Weight of GNMT: 33 kDa.

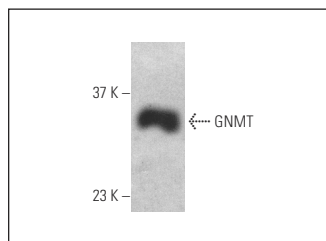
Positive Controls: HeLa whole cell lysate: sc-2200, human liver extract: sc-363766 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SUPPORT REAGENTS

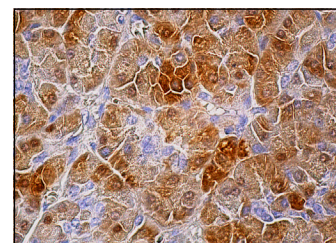
To ensure optimal results, the following support reagents are recommended:

- 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™ 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



GNMT (A-4) HRP: sc-166834 HRP. Direct western blot analysis of GNMT expression in human liver tissue extract.



GNMT (A-4): sc-166834. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic and nuclear staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Armstrong, V.L., et al. 2014. Expression of DNA methyltransferases is influenced by growth hormone in the long-living Ames dwarf mouse *in vivo* and *in vitro*. *J. Gerontol. A Biol. Sci. Med. Sci.* 69: 923-933.
2. Adamus, A., et al. 2018. GCSH antisense regulation determines breast cancer cells. viability. *Sci. Rep.* 8: 15399.
3. Zhu, J., et al. 2019. Transsulfuration activity can support cell growth upon extracellular cysteine limitation. *Cell Metab.* 30: 865-876.e5.
4. Kitada, M., et al. 2020. Methionine abrogates the renoprotective effect of a low-protein diet against diabetic kidney disease in obese rats with type 2 diabetes. *Aging* 12: 4489-4505.
5. Oh, S., et al. 2023. Chemical biopsy for GNMT as noninvasive and tumorigenesis-relevant diagnosis of liver cancer. *Anal. Chem.* 95: 1184-1192.

STORAGE

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

RESEARCH USE

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

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