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# GNMT (h4): 293 Lysate: sc-158555

## 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-adenosyl-homocysteine (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 steato-hepatitis and hepatocellular carcinoma. However, impaired AdoMet metabolism, which occurs in patients with mutations of GNMT, can also lead to liver injury.

## REFERENCES

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3. Uthus, E.O., Ross, S.A. and Davis, C.D. 2006. Differential effects of dietary selenium (Se) and folate on methyl metabolism in liver and colon of rats. *Biol. Trace Elem. Res.* 109: 201-214.
4. Velichkova, P. and Himo, F. 2006. Methyl transfer in glycine N-methyltransferase. A theoretical study. *J. Phys. Chem. B* 109: 8216-8219.
5. Luka, Z., Capdevila, A., Mato, J.M. and Wagner, C. 2006. A glycine N-methyltransferase knockout mouse model for humans with deficiency of this enzyme. *Transgenic Res.* 15: 393-397.
6. Mato, J.M. and Lu, S.C. 2007. Role of S-adenosyl-L-methionine in liver health and injury. *Hepatology* 45: 1306-1312.
7. Liu, S.P., Li, Y.S., Chen, Y.J., Chiang, E.P., Li, A.F., Lee, Y.H., Tsai, T.F., Hsiao, M., Hwang, S.F. and Chen, Y.M. 2007. Glycine N-methyltransferase<sup>-/-</sup> mice develop chronic hepatitis and glycogen storage disease in the liver. *Hepatology* 46: 1413-1425.
8. Luka, Z., Pakhomova, S., Luka, Y., Newcomer, M.E. and Wagner, C. 2007. Destabilization of human glycine N-methyltransferase by H176N mutation. *Protein Sci.* 16: 1957-1964.

## CHROMOSOMAL LOCATION

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

## RESEARCH USE

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

## PRODUCT

GNMT (h4): 293 Lysate represents a lysate of human GNMT transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

## APPLICATIONS

GNMT (h4): 293 Lysate is suitable as a Western Blotting positive control for human reactive GNMT antibodies. Recommended use: 10-20 µl per lane.

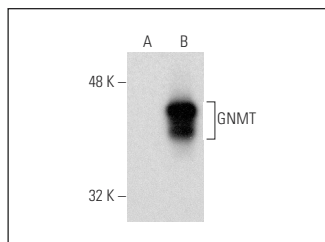
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

GNMT (A-4): sc-166834 is recommended as a positive control antibody for Western Blot analysis of enhanced human GNMT expression in GNMT transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## 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.

## DATA



GNMT (A-4): sc-166834. Western blot analysis of GNMT expression in non-transfected: sc-110760 (A) and human GNMT transfected: sc-158555 (B) 293 whole cell lysates.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.