SANTA CRUZ BIOTECHNOLOGY, INC.

GAMT (G-9): sc-398960

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In the creatine biosynthesis pathway, glycine is converted to guanidinoacetate by amidinotransferase, and guanidinoacetate is then converted to creatine by guanidinoacetate N-methyltransferase (GAMT). GAMT, a methyltransferase, uses S-adenosylmethionine as the methyl donor for this reaction. Methyltransferases are a type of transferase enzyme which transfers a methyl group to nucleic bases in DNA or amino acids in protein. Encoding a 236 amino acid protein, the human GAMT gene maps to chromosome 19p13.3. Defects in the GAMT gene leads to GAMT deficiency, which is associated with guanidinoacetate accumulation and decreased levels of creatine excretion in brain. Such biochemical changes are thought to lead to various neurological syndromes and muscular hypotonia.

REFERENCES

1. Stöckler, S., et al. 1994. Creatine deficiency in the brain: a new, treatable inborn error of metabolism. Pediatr. Res. 36: 409-413.
2. Isbrandt, D. and von Figura, K. 1995. Cloning and sequence analysis of human Guanidinoacetate N-methyltransferase cDNA. Biochim. Biophys. Acta 1264: 265-267.
3. Jenne, D.E., et al. 1997. The human guanidinoacetate methyltransferase (GAMT) gene maps to a syntenic region on 19p13.3, homologous to band C of mouse chromosome 10, but GAMT is not mutated in jittery mice. Biochem. Biophys. Res. Commun. 238: 723-727.
4. Schulze, A., et al. 1997. Creatine deficiency syndrome caused by guanidinoacetate methyltransferase deficiency: diagnostic tools for a new inborn error of metabolism. J. Pediatr. 131: 626-631.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 601240. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: GAMT (human) mapping to 19p13.3; Gamt (mouse) mapping to 10 C1.

SOURCE

GAMT (G-9) is a mouse monoclonal antibody raised against amino acids 1-160 mapping at the N-terminus of GAMT of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GAMT (G-9) is available conjugated to agarose (sc-398960 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398960 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398960 PE), fluorescein (sc-398960 FITC), Alexa Fluor® 488 (sc-398960 AF488), Alexa Fluor® 546 (sc-398960 AF546), Alexa Fluor® 594 (sc-398960 AF594) or Alexa Fluor® 647 (sc-398960 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398960 AF680) or Alexa Fluor® 790 (sc-398960 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GAMT (G-9) is recommended for detection of GAMT 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 GAMT siRNA (h): sc-97156, GAMT siRNA (m): sc-145323, GAMT shRNA Plasmid (h): sc-97156-SH, GAMT shRNA Plasmid (m): sc-145323-SH, GAMT shRNA (h) Lentiviral Particles: sc-97156-V and GAMT shRNA (m) Lentiviral Particles: sc-145323-V.

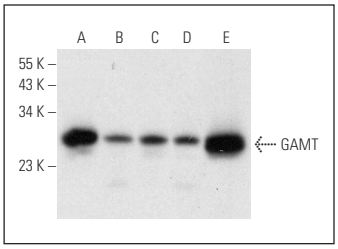
Molecular Weight of GAMT: 26 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Jurkat whole cell lysate: sc-2204 or human liver extract: sc-363766.

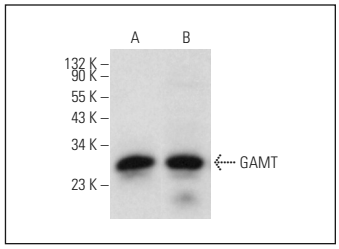
RECOMMENDED SUPPORT REAGENTS

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



GAMT (G-9): sc-398960. Western blot analysis of GAMT expression in Hep G2 (**A**), Daoy (**B**), Jurkat (**C**) and SH-SY5Y (**D**) whole cell lysates and human liver tissue extract (**E**).



GAMT (G-9): sc-398960. Western blot analysis of GAMT expression in Hep G2 whole cell lysate (**A**) and human brain tissue extract (**B**).

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.