SANTA CRUZ BIOTECHNOLOGY, INC.

GAMT (Q-22): sc-101964

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., Holzbach, U., Hanefeld, F., Marquardt, I., Helms, G., Requart, M., Hänicke, W. and Frahm, J. 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., Olsen, A.S. and Zimmer, M. 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., Hess, T., Wevers, R., Mayatepek, E., Bachert, P., Marescau, B., Knopp, M.V., De Deyn, P.P., Bremer, H.J. and Rating, D. 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/
6. Wang, Y., Du, D., Fang, L., Yang, G., Zhang, C., Zeng, R., Ullrich, A., Lottspeich, F. and Chen, Z. 2006. Tyrosine phosphorylated PAR3 regulates epithelial tight junction assembly promoted by EGFR signaling. EMBO J. 25: 5058-5070.

CHROMOSOMAL LOCATION

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

SOURCE

GAMT (Q-22) is a purified rabbit polyclonal antibody raised against GAMT of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

GAMT (Q-22) is recommended for detection of GAMT of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] 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.

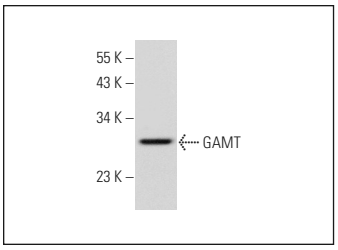
Molecular Weight of GAMT: 26 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or mouse liver extract: sc-2256.

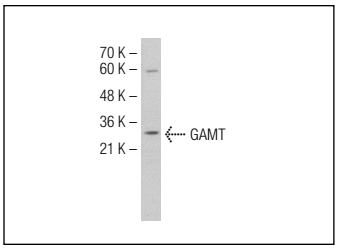
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



GAMT (Q-22): sc-101964. Western blot analysis of GAMT expression in mouse liver tissue extract.



GAMT (Q-22): sc-101964. Western blot analysis of GAMT expression in Jurkat whole cell lysate.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.