SANTA CRUZ BIOTECHNOLOGY, INC.

MAT IIβ (G-6): sc-514068

BACKGROUND

Methionine adenosyltransferase (MAT) catalyzes the formation of S-adenosyltransferase (AdoMet) for methionine catabolism in the liver. MAT IIβ (methionine adenosyltransferase II, β), also known as TGR, MAT-II or SDR23E1, is a 334 amino acid protein that is widely expressed and plays an important role in amino acid biosynthesis. Existing as a heterotetramer with two MAT IIα subunits, MAT IIβ functions as a non-catalytic regulatory protein that mediates the activity of MAT IIα, specifically by changing the kinetic properties of MAT IIα, thereby rendering it more susceptible to inhibition. MAT IIβ is expressed in hepatoma cells and is thought to play a role in cell proliferation, possibly by increasing the rate of DNA synthesis. Multiple isoforms of MAT IIβ exist due to alternative splicing events.

REFERENCES

1. Okada, G., Teraoka, H. and Tsukada, K. 1981. Multiple species of mammalian S-adenosylmethionine synthetase. Partial purification and characterization. Biochemistry 20: 934-940.
2. LeGros, H.L., Halim, A.B., Geller, A.M. and Kotb, M. 2000. Cloning, expression, and functional characterization of the β regulatory subunit of human methionine adenosyltransferase (MAT II). J. Biol. Chem. 27: 2359-2366.
3. LeGros, L., Halim, A.B., Chamberlin, M.E., Geller, A. and Kotb, M. 2001. Regulation of the human MAT2B gene encoding the regulatory β subunit of methionine adenosyltransferase, MAT II. J. Biol. Chem. 276: 24918-24924.
4. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605527. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Martínez-Chantar, M.L., García-Trevijano, E.R., Latasa, M.U., Martín-Duce, A., Fortes, P., Caballería, J., Avila, M.A. and Mato, J.M. 2003. Methionine adenosyltransferase II β subunit gene expression provides a proliferative advantage in human hepatoma. Gastroenterology 124: 940-948.

CHROMOSOMAL LOCATION

Genetic locus: MAT2B (human) mapping to 5q34; Mat2b (mouse) mapping to 11 A5.

SOURCE

MAT IIβ (G-6) is a mouse monoclonal antibody raised against amino acids 35-334 mapping at the C-terminus of MAT IIβ 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.

STORAGE

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

APPLICATIONS

MAT IIβ (G-6) is recommended for detection of MAT IIβ 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), 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 MAT IIβ siRNA (h): sc-75753, MAT IIβ siRNA (m): sc-75754, MAT IIβ shRNA Plasmid (h): sc-75753-SH, MAT IIβ shRNA Plasmid (m): sc-75754-SH, MAT IIβ shRNA (h) Lentiviral Particles: sc-75753-V and MAT IIβ shRNA (m) Lentiviral Particles: sc-75754-V.

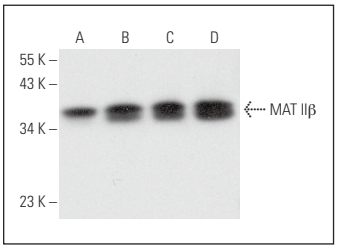
Molecular Weight of MAT IIβ: 38 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Hep G2 cell lysate: sc-2227 or HEK293 whole cell lysate: sc-45136.

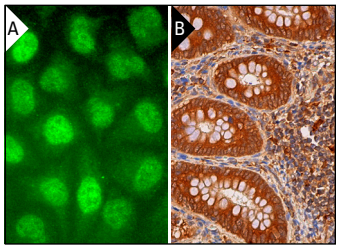
RECOMMENDED SUPPORT REAGENTS

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



MAT IIβ (G-6): sc-514068. Western blot analysis of MAT IIβ expression in Hep G2 (**A**), HeLa (**B**), HEK293 (**C**) and Jurkat (**D**) whole cell lysates.



MAT IIβ (G-6): sc-514068. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic and faint nuclear staining of glandular cells and Lymphoid cells (**B**).

RESEARCH USE

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