SANTA CRUZ BIOTECHNOLOGY, INC.

MAT Iα (V-15): sc-28029

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Methionine adenosyltransferase (MAT) catalyzes the formation of S-adenosyltransferase (AdoMet) for methionine catabolism in the liver. Two different genes, MAT1A and MAT2A, encode a liver specific and non-liver specific form of MAT, respectively. Inactivation of the liver specific gene product, designated MAT I/III, associates with liver diseases such as cirrhosis. MAT1A expression also correlates with a differentiated phenotype, whereas liver cells expressing MAT2A present a dedifferentiated phenotype and lowered AdoMet synthesis. Likewise, NFκB and TNFα cause a switch from MAT1A to MAT2A expression in human hepatocellular carcinoma (HCC), which facilitates cancer cell growth.

REFERENCES

1. Lu, S.C., et al. 2002. Role of abnormal methionine metabolism in alcoholic liver injury. Alcohol 27: 155-162.
2. Avila, M.A., et al. 2002. S-Adenosylmethionine revisited: its essential role in the regulation of liver function. Alcohol 27: 163-167.
3. Martinez-Chantar, M.L., et al. 2003. L-methionine availability regulates expression of the methionine adenosyltransferase 2A gene in human hepatocarcinoma cells: role of S-adenosylmethionine. J. Biol. Chem. 278: 19885-19890.

CHROMOSOMAL LOCATION

Genetic locus: MAT1A (human) mapping to 10q23.1, MAT2A (human) mapping to 2p11.2; Mat1a (mouse) mapping to 14 B, Mat2a (mouse) mapping to 6 C1.

SOURCE

MAT Iα (V-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of MAT Iα of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-28029 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MAT Iα (V-15) is recommended for detection of MAT Iα and, to a lesser extent, MAT IIα of mouse, rat 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)], 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).

MAT Iα (V-15) is also recommended for detection of MAT Iα and, to a lesser extent, MAT IIα in additional species, including equine and porcine.

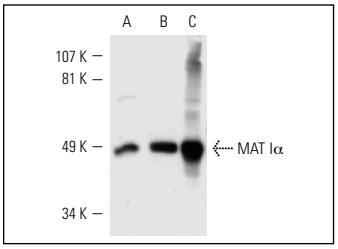
Molecular Weight of MAT Iα: 44 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, mouse liver extract: sc-2256 or rat liver extract: sc-2395.

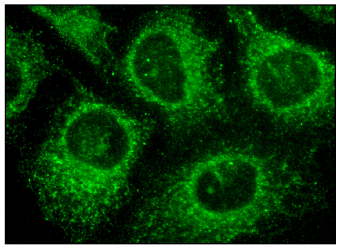
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MAT Iα (V-15): sc-28029. Western blot analysis of MAT Iα and MAT IIα expression in Hep G2 whole cell lysate (**A**) and mouse liver (**B**) and rat liver (**C**) tissue extracts.



MAT Iα (V-15): sc-28029. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Li, S., et al. 2009. Regulation of homocysteine homeostasis through the transcriptional coactivator PGC-1α. Am. J. Physiol. Endocrinol. Metab. 296: E543-E548.
2. Brown, J.M., et al. 2010. Temporal study of acetaminophen (APAP) and S-adenosyl-L-methionine (SAMe) effects on subcellular hepatic SAMe levels and methionine adenosyltransferase (MAT) expression and activity. Toxicol. Appl. Pharmacol. 247: 1-9.
3. Ikeda, S., et al. 2010. Expression of methylation pathway enzymes in bovine oocytes and preimplantation embryos. J. Exp. Zool. A Ecol. Genet. Physiol. 313: 129-136.

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.