SANTA CRUZ BIOTECHNOLOGY, INC.

MAT IIα (H-14): sc-28032

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, designated MAT Iα and MAT IIα, respectively. Inactivation of the liver specific gene product, designated MAT I/III, associates with liver diseases such as cirrhosis. MAT Iα expression also correlates with a differentiated phenotype, whereas liver cells expressing MAT IIα present a dedifferentiated phenotype and lowered AdoMet synthesis. Likewise, NF-kB and TNFα cause a switch from MAT Iα to MAT IIα 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.
4. Yang, H., et al. 2003. Induction of human methionine adenosyltransferase 2A expression by tumor necrosis factor α. Role of NFκB and AP-1. J. Biol. Chem. 278: 50887-50896.
5. Li, M., et al. 2004. Silencing of human methionine adenosyltransferase 1A expression by methylation of the coding region. J. Biol. Chem. 290: 19541.
6. Drummelsmith, J., et al. 2004. Differential protein expression analysis of *Leishmania major* reveals novel roles for methionine adenosyltransferase and S-adenosylmethionine in methotrexate resistance. J. Biol. Chem. 279: 33273-33280.

CHROMOSOMAL LOCATION

Genetic locus: MAT2A (human) mapping to 2p11.2; Mat2a (mouse) mapping to 6 C1.

SOURCE

MAT IIα (H-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of MAT IIα 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-28032 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

MAT IIα (H-14) is recommended for detection of MAT IIα and to a lesser extent, MAT Iα of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 IIα (I-17) is also recommended for detection of MAT IIα in additional species, including equine, canine, bovine and porcine.

Molecular Weight of MAT IIα: 44 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

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) 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.

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.