SANTA CRUZ BIOTECHNOLOGY, INC.

# MMAB (C-17): sc-69506

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*The Power to Question*

## BACKGROUND

MMAB (methylmalonic aciduria (cobalamin deficiency) type B protein), also known as ATR or Cob(I)alamin adenosyltransferase, is a mitochondrial protein expressed in skeletal muscle and liver. MMAB belongs to the Cob(I)alamin adenosyltransferase family and plays an important role in adenosylcobalamin (AdoCbl) biosynthesis. More specifically, MMAB catalyzes the final step in the biosynthesis pathway: the conversion of vitamin B12 (also known as cobalamin) to AdoCbl. AdoCbl is an essential cofactor utilized by MUT, the mitochondrial methylmalonyl-CoA mutase that plays an important role in the catabolism of cholesterol, branched chain amino acids, odd-numbered fatty acids and other metabolites. Mutations in the gene encoding MMAB can result in methylmalonic aciduria type B (MMAB), also known as vitamin B12-responsive methylmalonicaciduria of cblB complementation type. The autosomal recessive MMAB disease is characterized by defective synthesis of AdoCbl.

## REFERENCES


1. Johnson, C.L., et al. 2001. Functional genomic, biochemical, and genetic characterization of the *Salmonella* pduO gene, an ATP: cob(I)alamin adenosyltransferase gene. J. Bacteriol. 183: 1577-1584.
2. Dobson, C.M., et al. 2002. Identification of the gene responsible for the cblB complementation group of vitamin B12-dependent methylmalonic aciduria. Hum. Mol. Genet. 11: 3361-3369.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607568. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Saridakis, V., et al. 2004. The structural basis for methylmalonic aciduria. The crystal structure of archaeal ATP: cobalamin adenosyltransferase. J. Biol. Chem. 279: 23646-23653.
5. Lerner-Ellis, J.P., et al. 2006. Mutation and biochemical analysis of patients belonging to the cblB complementation class of vitamin B12-dependent methylmalonic aciduria. Mol. Genet. Metab. 87: 219-225.
6. Zhang, J., et al. 2006. Impact of cblB mutations on the function of ATP: cob(I)alamin adenosyltransferase in disorders of vitamin B12 metabolism. Mol. Genet. Metab. 87: 315-322.
7. Keeratichamroen, S., et al. 2007. Novel mutations found in two genes of Thai patients with isolated methylmalonic acidemia. Biochem. Genet. 45: 421-430.
8. Murphy, C., et al. 2007. Regulation by SREBP-2 defines a potential link between isoprenoid and adenosylcobalamin metabolism. Biochem. Biophys. Res. Commun. 355: 359-364.
9. Froese, D.S., et al. 2008. Restricted role for methionine synthase reductase defined by subcellular localization. Mol. Genet. Metab. 94: 68-77.


## CHROMOSOMAL LOCATION

Genetic locus: MMAB (human) mapping to 12q24.11; Mmab (mouse) mapping to 5 F.

## SOURCE

MMAB (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MMAB 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-69506 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MMAB (C-17) is recommended for detection of MMAB 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).

MMAB (C-17) is also recommended for detection of MMAB in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MMAB siRNA (h): sc-75802, MMAB siRNA (m): sc-75803, MMAB shRNA Plasmid (h): sc-75802-SH, MMAB shRNA Plasmid (m): sc-75803-SH, MMAB shRNA (h) Lentiviral Particles: sc-75802-V and MMAB shRNA (m) Lentiviral Particles: sc-75803-V.

Molecular Weight of MMAB: 27 kDa.

Positive Controls: DU 145 cell lysate: sc-2268 or 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.

## 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.