

# MMAB (G-3): sc-271424

## 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

- 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.
- 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.
- 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/>
- 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

MMAB (G-3) is a mouse monoclonal antibody raised against amino acids 34-250 mapping at the C-terminus of MMAB of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MMAB (G-3) is available conjugated to agarose (sc-271424 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271424 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271424 PE), fluorescein (sc-271424 FITC), Alexa Fluor® 488 (sc-271424 AF488), Alexa Fluor® 546 (sc-271424 AF546), Alexa Fluor® 594 (sc-271424 AF594) or Alexa Fluor® 647 (sc-271424 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271424 AF680) or Alexa Fluor® 790 (sc-271424 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

MMAB (G-3) is recommended for detection of MMAB 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

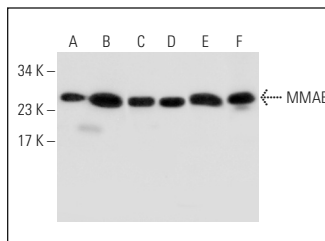
Molecular Weight of MMAB: 27 kDa.

Positive Controls: A-673 cell lysate: sc-2414, HEK293 whole cell lysate: sc-45136 or RT-4 whole cell lysate: sc-364257.

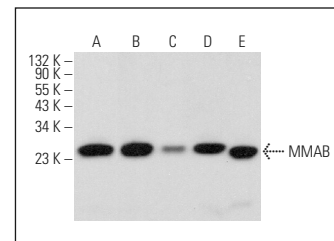
## RECOMMENDED SUPPORT REAGENTS

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.

## DATA



MMAB (G-3): sc-271424. Western blot analysis of MMAB expression in A-673 (A), HEK293 (B), RT-4 (C), U-251-MG (D) and A549 (E) whole cell lysates and human tonsil tissue extract (F).



MMAB (G-3): sc-271424. Western blot analysis of MMAB expression in A549 (A), NTERA-2 cl.D1 (B), MOLT-4 (C), Jurkat (D) and NIH/3T3 (E) whole cell lysates.

## 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](http://www.scbt.com) for detailed protocols and support products.