

SETMAR (A-12): sc-515243

BACKGROUND

SETMAR (SET domain and mariner transposase fusion gene-containing protein), also known as METNASE or Hsmar1, is a ubiquitously expressed fusion protein with histone-lysine N-methyltransferase activity and DNA-binding, DNA-looping and DNA-cleavage activities. Localizing to the nucleus, SETMAR contains one N-terminal SET domain which facilitates the histone-lysine methyltransferase activity (at H3-Lys4 and H3-Lys36) and a C-terminal transposase domain which is responsible for the DNA-binding, -looping and -cleavage activities. Both domains are essential for the proper function of SETMAR. SETMAR specifically functions in DNA repair but, on its own, SETMAR can only bind to 5'-TIR (terminal inverted repeats) in DNA. For interactions with non-TIR DNA, SETMAR (via its SET domain) binds to and forms a stable complex with the pre-mRNA processing protein PRP19. Due to alternative splicing events, two isoforms exist.

REFERENCES

- Robertson, H.M. and Zumpano, K.L. 1997. Molecular evolution of an ancient mariner transposon, Hsmar1, in the human genome. *Gene* 205: 203-217.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609834. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Higgins, J.J., et al. 2004. Candidate genes for recessive non-syndromic mental retardation on chromosome 3p (MRT2A). *Clin. Genet.* 65: 496-500.
- Lee, S.H., et al. 2005. The SET domain protein Metnase mediates foreign DNA integration and links integration to nonhomologous end-joining repair. *Proc. Natl. Acad. Sci. USA* 102: 18075-18080.
- Cordaux, R., et al. 2006. Birth of a chimeric primate gene by capture of the transposase gene from a mobile element. *Proc. Natl. Acad. Sci. USA* 103: 8101-8106.

CHROMOSOMAL LOCATION

Genetic locus: SETMAR (human) mapping to 3p26.1; Setmar (mouse) mapping to 6 E1.

SOURCE

SETMAR (A-12) is a mouse monoclonal antibody raised against amino acids 141-207 mapping within an internal region of SETMAR of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SETMAR (A-12) is available conjugated to agarose (sc-515243 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515243 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515243 PE), fluorescein (sc-515243 FITC), Alexa Fluor® 488 (sc-515243 AF488), Alexa Fluor® 546 (sc-515243 AF546), Alexa Fluor® 594 (sc-515243 AF594) or Alexa Fluor® 647 (sc-515243 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515243 AF680) or Alexa Fluor® 790 (sc-515243 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SETMAR (A-12) is recommended for detection of SETMAR 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 SETMAR siRNA (h): sc-78354, SETMAR siRNA (m): sc-153388, SETMAR shRNA Plasmid (h): sc-78354-SH, SETMAR shRNA Plasmid (m): sc-153388-SH, SETMAR shRNA (h) Lentiviral Particles: sc-78354-V and SETMAR shRNA (m) Lentiviral Particles: sc-153388-V.

Molecular Weight of human SETMAR: 78 kDa.

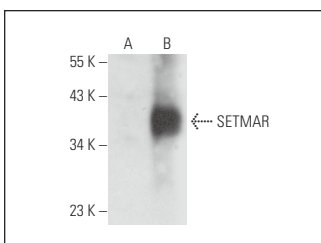
Molecular Weight of mouse SETMAR: 35 kDa.

Positive Controls: SETMAR (m): 293T Lysate: sc-123507.

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



SETMAR (A-12): sc-515243. Western blot analysis of SETMAR expression in non-transfected: sc-117752 (A) and mouse SETMAR transfected: sc-123507 (B) 293T 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.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA