

MetAP-1 (C-12): sc-514521

BACKGROUND

Methionine aminopeptidases (MetAP), also designated peptidase M proteins, are members of the M24 family of proteins. MetAP proteins remove the amino-terminal methionine residue from nascent polypeptides. MetAP-1 is a 394-amino acid protein that is expressed at low levels in all tissues, but is highly expressed in skeletal muscles. The active site of MetAP-1 contains two adjacent divalent metal ions connected by a water molecule or hydroxide ion. The control of cell proliferation in mammalian cells is directly linked and strictly dependent on the evolutionarily highly conserved mechanism that MetAP-1 employs. Eukaryotes contain both MetAP-1 and MetAP-2, whereas prokaryotes possess only the MetAP-1 enzyme. Pyridine-2-carboxylic acid thiazol-2-ylamide (PCAT) forms a scaffold that inhibits the action of MetAP-1, while 1,2,4-triazole is a non-peptide inhibitor of MetAP-1 binding to the active site with the N1 and N2 atoms of the triazole moiety complexing two divalent ions.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610151. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Oefner, C., et al. 2003. The 1.15 Å crystal structure of the *Staphylococcus aureus* methionyl-aminopeptidase and complexes with triazole based inhibitors. J. Mol. Biol. 332: 13-21.
3. Brdlik, C.M., et al. 2004. A single amino acid residue defines the difference in ovalicin sensitivity between type I and II methionine aminopeptidases. J. Biol. Chem. 279: 9475-9480.
4. Swierczek, K., et al. 2005. Molecular discrimination of type-I over type-II methionyl aminopeptidases. Biochemistry 44: 12049-12056.
5. Bernier, S.G., et al. 2005. Methionine aminopeptidases type I and type II are essential to control cell proliferation. J. Cell. Biochem. 95: 1191-1203.
6. Luo, Q.L., et al. 2005. Inhibitors of type I MetAPs containing pyridine-2-carboxylic acid thiazol-2-ylamide. Part 1: SAR studies on the determination of the key scaffold. Bioorg. Med. Chem. Lett. 15: 635-638.

CHROMOSOMAL LOCATION

Genetic locus: METAP1 (human) mapping to 4q23; Metap1 (mouse) mapping to 3 G3.

SOURCE

MetAP-1 (C-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 67-89 near the N-terminus of MetAP-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514521 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

MetAP-1 (C-12) is recommended for detection of MetAP-1 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 MetAP-1 siRNA (h): sc-61022, MetAP-1 siRNA (m): sc-61023, MetAP-1 shRNA Plasmid (h): sc-61022-SH, MetAP-1 shRNA Plasmid (m): sc-61023-SH, MetAP-1 shRNA (h) Lentiviral Particles: sc-61022-V and MetAP-1 shRNA (m) Lentiviral Particles: sc-61023-V.

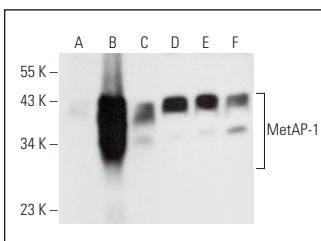
Molecular Weight of MetAP-1: 43 kDa.

Positive Controls: MetAP-1 (m): 293T Lysate: sc-121609, A-375 cell lysate: sc-3811 or A549 cell lysate: sc-2413.

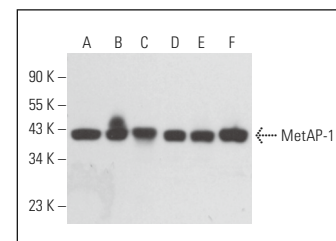
RECOMMENDED SUPPORT REAGENTS

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



MetAP-1 (C-12): sc-514521. Western blot analysis of MetAP-1 expression in non-transfected 293T: sc-117752 (A), mouse MetAP-1 transfected 293T: sc-121609 (B), COLO 205 (C), A-375 (D), A549 (E) and Hep G2 (F) whole cell lysates.



MetAP-1 (C-12): sc-514521. Western blot analysis of MetAP-1 expression in COLO 205 (A), MOLT-4 (B), HL-60 (C), NIH/3T3 (D), RAW 264.7 (E) and KNRK (F) 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 for detailed protocols and support products.