SANTA CRUZ BIOTECHNOLOGY, INC.

MetAP-2 siRNA (m): sc-61025

BACKGROUND

Methionine aminopeptidases (MetAP), also designated peptidase M proteins, are members of the M24 family of proteins. Both MetAP-1 and MetAP-2 release N-terminal amino acids, usually methionine, from nascent peptides and arylamines. Eukaryotes contain both MetAP-1 and MetAP-2, whereas prokaryotes possess only the MetAP-1 enzyme. MetAP-1 and MetAP-2 control cell proliferation in mammalian cells. MetAP-2 is highly conserved between human and *Saccharomyces cerevisiae*. Neurofibromin (NF1) regulates MetAp-2 and increased expression of MetAP-2 correlates with several forms of cancer. Inhibitors of MetAP-2 are potential targets in cancer therapeutics, particularly in NF1-associated tumor proliferation. Chemotherapeutic drugs such as ovalicin and fumagillin bind to the active site of and inhibit MetAP-2.

REFERENCES

1. Sin, N., et al. 1997. The aminopeptidase, MetAP-2. Proc. Natl. Acad. Sci. USA 94: 6099-6103.
2. 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.
3. Chun, E., et al. 2005. Novel inhibitors targeted to methionine aminopeptidase 2 (MetAP-2) strongly inhibit the growth of cancers in xenografted nude model. Int. J. Cancer 114: 124-130.
4. Kallander, L.S., et al. 2005. 4-aryl-1,2,3-triazole: a novel template for a reversible methionine aminopeptidase 2 inhibitor, optimized to inhibit angiogenesis *in vivo*. J. Med. Chem. 48: 5644-5647.
5. Morowitz, M.J., et al. 2005. Methionine aminopeptidase 2 inhibition is an effective treatment strategy for neuroblastoma in preclinical models. Clin. Cancer Res. 11: 2680-2685.
6. Zhang, H., et al. 2005. Investigations into microsporidian methionine aminopeptidase type 2: a therapeutic target for microsporidiosis. Folia Parasitol. 52: 182-192.
7. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 601870. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Metap2 (mouse) mapping to 10 C2.

PRODUCT

MetAP-2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MetAP-2 shRNA Plasmid (m): sc-61025-SH and MetAP-2 shRNA (m) Lentiviral Particles: sc-61025-V as alternate gene silencing products.

For independent verification of MetAP-2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61025A, sc-61025B and sc-61025C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCL, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MetAP-2 siRNA (m) is recommended for the inhibition of MetAP-2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

MetAP-2 (F-7): sc-365637 is recommended as a control antibody for monitoring of MetAP-2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MetAP-2 gene expression knockdown using RT-PCR Primer: MetAP-2 (m)-PR: sc-61025-PR (20 µl, 570 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.