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SANTA CRUZ BIOTECHNOLOGY, INC.

Meprin Aα siRNA (h): sc-43925

BACKGROUND

Meprin is a member of the astacin family of zinc metalloendopeptidases that is highly expressed in kidney and intestinal brush border membranes as well as in leukocytes and some cancer cells. It consists of two subunits, α and β, which form disulfide-bridged homo- and heterodimers that differ in oligomerization potentials and substrate specificity. Meprin α forms heterogeneous multimers and is secreted, while meprin β restricts the oligomerization potential of meprin to tetramers and attaches meprin oligomers to the plasma membrane. Its substrates include bioactive peptides and extracellular matrix proteins. The genes encoding human meprin α and β map to chromosomes 6p12.3 and 18q12.1, respectively. Each meprin subunit contains a zinc-binding protease domain located between Asn-63 to Leu-260 and a carboxy terminal MAM (meprin, A5 protein, receptor protein-tyrosine phosphatase μ) domain. The meprin proteins have been implicated in cancer and intestinal inflammation.

REFERENCES

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2. Bond, J.S., et al. 1995. The structural genes, MEP1A and MEP1B, for the α and β subunits of the metalloendopeptidase meprin map to human chromosomes 6p and 18q, respectively. Genomics 25: 300-303.
3. Tsukuba, T., et al. 2002. Chaperone interactions of the metalloproteinase meprin A in the secretory or proteasomal-degradative pathway. Arch. Biochem. Biophys. 397: 191-198.
4. Bertenshaw, G.P., et al. 2002. Probing the active sites and mechanisms of rat metalloproteases meprin A and B. Biol. Chem. 383: 1175-1183.
5. Bertenshaw, G.P., et al. 2003. Structure of homo- and hetero-oligomeric meprin metalloproteases. Dimers, tetramers and high molecular mass multimers. J. Biol. Chem. 278: 2522-2532.
6. Leuenberger, B., et al. 2003. Human meprin β: O-linked glycans in the intervening region of the type I membrane protein protect the C-terminal region from proteolytic cleavage and diminish its secretion. Biochem. J. 369: 659-665.

CHROMOSOMAL LOCATION

Genetic locus: MEP1A (human) mapping to 6p12.3.

PRODUCT

Meprin Aα siRNA (h) 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 Meprin Aα shRNA Plasmid (h): sc-43925-SH and Meprin Aα shRNA (h) Lentiviral Particles: sc-43925-V as alternate gene silencing products.

For independent verification of Meprin Aα (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-43925A, sc-43925B and sc-43925C.

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

Meprin Aα siRNA (h) is recommended for the inhibition of Meprin Aα expression in human 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Meprin Aα gene expression knockdown using RT-PCR Primer: Meprin Aα (h)-PR: sc-43925-PR (20 µl, 583 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.