SANTA CRUZ BIOTECHNOLOGY, INC.

LMLN siRNA (h): sc-78012

BACKGROUND

LMLN, Leishmanolysin-like, is a zinc-binding peptidase belonging to the peptidase M8 family. Also known as invadolysin, LMLN is a metalloprotease found only in metazoans. LMLN activity appears to be essential for mitotic progression. LMLN has a protease activity which cleaves lamin *in vitro*. LMLN mutations will allow increased levels of nuclear envelope proteins, monopolar and asymmetric spindles, and chromosomes that appear hypercondensed in length with a surrounding halo of loosely condensed chromatin. LMLN proteins are found on cytoplasmic ring structures that are similar to invadopodia. These structures are generally associated with high levels of proteolysis and cell signaling and are frequently seen in metastatic cancer cells that are invading surrounding tissues. LMLN is relocalized from the cytoplasm to the leading edge of cells upon migration. Mutations of LMLN can have a dramatic impact on the directed migrations of of germ cells. LMLN has significant similarities with Leishmanolysin produced by trypanosomes such as Leishmania. This conserved nature could likely direct research in mitigating spread of trypanosome organisms.

REFERENCES

1. El-Sayed, N.M. and Donelson, J.E. 1997. African trypanosomes have differentially expressed genes encoding homologues of the Leishmania GP63 surface protease. J. Biol. Chem. 272: 26742-26748.
2. Brittingham, A., et al. 1999. Interaction of Leishmania gp63 with cellular receptors for fibronectin. Infect. Immun. 67: 4477-4484.
3. Ilgoutz, S.C. and McConville, M.J. 2001. Function and assembly of the Leishmania surface coat. Int. J. Parasitol. 31: 899-908.
4. McHugh, B., et al. 2004. Invadolysin: a novel, conserved metalloprotease links mitotic structural rearrangements with cell migration. J. Cell Biol. 167: 673-686.
5. Santos, A.L., et al. 2006. The ubiquitous gp63-like metalloprotease from lower trypanosomatids: in the search for a function. An. Acad. Bras. Cienc. 78: 687-714.
6. Santos, A.L., et al. 2007. Phytomonas serpens: immunological similarities with the human trypanosomatid pathogens. Microbes Infect. 9: 915-921.

CHROMOSOMAL LOCATION

Genetic locus: LMLN (human) mapping to 3q29.

PRODUCT

LMLN 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 LMLN shRNA Plasmid (h): sc-78012-SH and LMLN shRNA (h) Lentiviral Particles: sc-78012-V as alternate gene silencing products.

For independent verification of LMLN (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-78012A, sc-78012B and sc-78012C.

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

LMLN siRNA (h) is recommended for the inhibition of LMLN 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 LMLN gene expression knockdown using RT-PCR Primer: LMLN (h)-PR: sc-78012-PR (20 µl). 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.