SANTA CRUZ BIOTECHNOLOGY, INC.

EML3 siRNA (m): sc-144644

BACKGROUND

At the onset of mitosis, assembly of the mitotic spindle requires a global change in the activity of microtubule-binding proteins. EML3 (Echinoderm microtubule-associated protein-like 3) is a 896 amino acid protein that likely modifies microtubule dynamics by making them longer. Through colocalization with spindle microtubules during mitosis, EML3 plays a role in correct metaphase chromosome alignment. EML3 contains a nuclear localization signal and a microtubule-binding domain. The gene encoding EML3 maps to human chromosome 11, which houses over 1,400 genes and comprises near-ly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

REFERENCES

1. Taylor, T.D., et al. 2006. Human chromosome 11 DNA sequence and analysis including novel gene identification. Nature 440: 497-500.
2. Singh, P., et al. 2008. Microtubule assembly dynamics: an attractive target for anticancer drugs. IUBMB Life 60: 368-375.
3. Walczak, C.E., et al. 2008. Mechanisms of mitotic spindle assembly and function. Int. Rev. Cytol. 265: 111-158.
4. Tegha-Dunghu, J., et al. 2008. EML3 is a nuclear microtubule-binding protein required for the correct alignment of chromosomes in metaphase. J. Cell Sci. 121: 1718-1726.
5. Rao, C.V., et al. 2009. Enhanced genomic instabilities caused by deregulated microtubule dynamics and chromosome segregation: a perspective from genetic studies in mice. Carcinogenesis 30: 1469-1474.
6. Dumont, S., et al. 2009. Force and length in the mitotic spindle. Curr. Biol. 19: R749-R761.
7. Kunda, P., et al. 2009. The actin cytoskeleton in spindle assembly and positioning. Trends Cell Biol. 19: 174-179.

CHROMOSOMAL LOCATION

Genetic locus: Eml3 (mouse) mapping to 19 A.

PRODUCT

EML3 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 EML3 shRNA Plasmid (m): sc-144644-SH and EML3 shRNA (m) Lentiviral Particles: sc-144644-V as alternate gene silencing products.

For independent verification of EML3 (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-144644A, sc-144644B and sc-144644C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

EML3 siRNA (m) is recommended for the inhibition of EML3 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor EML3 gene expression knockdown using RT-PCR Primer: EML3 (m)-PR: sc-144644-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.