

# EML4 siRNA (h): sc-77271

## BACKGROUND

Microtubules are components of the Actin cytoskeleton that play crucial roles in cell morphogenesis, cell motility, spindle formation and chromosome movements. Echinoderm microtubule-associated (EML) proteins function to modify the assembly dynamics of microtubules. EML4 (echinoderm microtubule-associated protein-like 4), also known as EMAPL4, ELP120, C2orf2 or ROPP120, is a 981 amino acid cytoplasmic protein that contains nine WD repeats. Expressed at high levels during mitosis, EML4 is thought to modify the assembly dynamics of microtubules, specifically altering microtubules to become longer and more flexible. Due to a chromosomal inversion with chromosome 2p, EML4 may exist as a fusion protein with ALK (anaplastic lymphoma receptor tyrosine kinase), producing an EML4-ALK fusion complex that plays a role in the pathogenesis of lung cancer.

## REFERENCES

1. Heidebrecht, H.J., et al. 2000. Cloning and localization of C2orf2(ropp120), a previously unknown WD repeat protein. *Genomics* 68: 348-350.
2. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607442. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Pollmann, M., et al. 2006. Human EML4, a novel member of the EMAP family, is essential for microtubule formation. *Exp. Cell Res.* 312: 3241-3251.
4. Soda, M., et al. 2007. Identification of the transforming EML4-ALK fusion gene in non-small-cell lung cancer. *Nature* 448: 561-566.
5. Houtman, S.H., et al. 2007. Echinoderm microtubule-associated protein like protein 4, a member of the echinoderm microtubule-associated protein family, stabilizes microtubules. *Neuroscience* 144: 1373-1382.
6. Koivunen, J.P., et al. 2008. EML4-ALK fusion gene and efficacy of an ALK kinase inhibitor in lung cancer. *Clin. Cancer Res.* 14: 4275-4283.
7. Inamura, K., et al. 2008. EML4-ALK fusion is linked to histological characteristics in a subset of lung cancers. *J. Thorac. Oncol.* 3: 13-17.

## CHROMOSOMAL LOCATION

Genetic locus: EML4 (human) mapping to 2p21.

## PRODUCT

EML4 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see EML4 shRNA Plasmid (h): sc-77271-SH and EML4 shRNA (h) Lentiviral Particles: sc-77271-V as alternate gene silencing products.

For independent verification of EML4 (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-77271A, sc-77271B and sc-77271C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

EML4 siRNA (h) is recommended for the inhibition of EML4 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  $\mu$ M in 66  $\mu$ l. 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

EML4 (H.21): sc-130450 is recommended as a control antibody for monitoring of EML4 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor EML4 gene expression knockdown using RT-PCR Primer: EML4 (h)-PR: sc-77271-PR (20  $\mu$ l). 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.