SANTA CRUZ BIOTECHNOLOGY, INC.

EML4 siRNA (m): sc-77272

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 2p21, 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

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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.
8. Perner, S., et al. 2008. EML4-ALK fusion lung cancer: a rare acquired event. Neoplasia 10: 298-302.

CHROMOSOMAL LOCATION

Genetic locus: Eml4 (mouse) mapping to 17 E4.

PRODUCT

EML4 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 EML4 shRNA Plasmid (m): sc-77272-SH and EML4 shRNA (m) Lentiviral Particles: sc-77272-V as alternate gene silencing products.

For independent verification of EML4 (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-77272A, sc-77272B and sc-77272C.

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

EML4 siRNA (m) is recommended for the inhibition of EML4 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 EML4 gene expression knockdown using RT-PCR Primer: EML4 (m)-PR: sc-77272-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.