SANTA CRUZ BIOTECHNOLOGY, INC.

EPLIN siRNA (h): sc-60593

BACKGROUND

Epithelial protein lost in neoplasm (EPLIN) is a cytoskeleton-associated protein characterized by the presence of a single centrally located lin-11, isl-1 and mec-3 (LIM) domain. It also contains at least two Actin-binding domains, in which the C-terminal domain binds more effectively than the N-terminal domain. By binding Actin monomers and filaments, EPLIN is involved in regulation of the Actin cytoskeleton by increasing the number and size of Actin stress fibers, delaying filament nucleation, reducing formation of branched filaments and bundling of Actin filaments. It also inhibits membrane ruffling and Actin filament depolymerization. EPLIN is strongly expressed in placenta, kidney, pancreas, prostate, ovary, spleen and heart, and to a lesser degree in lung, liver, brain, skeletal muscle, thymus, testis and intestine. It is expressed as two isoforms, EPLIN-α and EPLIN-β. Downregulation of EPLIN-α expression may contribute to the motility of invasive tumor cells.

REFERENCES

1. Chen, S., et al. 2000. Characterization of the human EPLIN (epithelial protein lost in neoplasm) gene reveals distinct promoters for the two EPLIN isoforms. Gene 248: 69-76.
2. Maul, R.S. and Chang, D.D. 2000. EPLIN, epithelial protein lost in neoplasm. Oncogene 18: 7838-7841.
3. Maul, R.S., et al. 2001. Characterization of mouse epithelial protein lost in neoplasm (EPLIN) and comparison of mammalian and zebrafish EPLIN. Gene 262: 155-160.
4. Song, Y., et al. 2002. Inhibition of anchorage-independent growth of transformed NIH3T3 cells by epithelial protein lost in neoplasm (EPLIN) requires localization of EPLIN to Actin cytoskeleton. Mol. Biol. Cell 13: 1408-1416.
5. Maul, R.S., et al. 2003. EPLIN regulates Actin dynamics by cross-linking and stabilizing filaments. J. Cell Biol. 160: 399-407.
6. Meng, X. and Wilkins, J.A. 2005. Compositional characterization of the cytoskeleton of NK-like cells. J. Proteome Res. 4: 2081-2087.

CHROMOSOMAL LOCATION

Genetic locus: LIMA1 (human) mapping to 12q13.12.

PRODUCT

EPLIN 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 EPLIN shRNA Plasmid (h): sc-60593-SH and EPLIN shRNA (h) Lentiviral Particles: sc-60593-V as alternate gene silencing products.

For independent verification of EPLIN (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-60593A, sc-60593B and sc-60593C.

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

EPLIN siRNA (h) is recommended for the inhibition of EPLIN 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.

GENE EXPRESSION MONITORING

EPLIN (20): sc-136399 is recommended as a control antibody for monitoring of EPLIN 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor EPLIN gene expression knockdown using RT-PCR Primer: EPLIN (h)-PR: sc-60593-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zeng, J., et al. 2022. EPLIN, a putative tumour suppressor in colorectal cancer, implications in drug resistance. Int. J. Mol. Sci. 23: 15232.

RESEARCH USE

For research use only, not for use in diagnostic procedures.