SANTA CRUZ BIOTECHNOLOGY, INC.

ephrin-B2 siRNA (m): sc-39439

BACKGROUND

Ephrins, which act as ligands for Eph receptors, are cell-surface proteins which fall into two categories, ephrin-A and ephrin-B based on their structure and function. Ephrin-B proteins are transmembrane and have conserved cytoplasmic tyrosine residues that are phosphorylated upon interaction with an EphB receptor. Eph receptors and ephrins exhibit complementary expression in many tissues during embryogenesis indicating that bidirectional activation of Eph receptors and ephrin-B proteins may occur at expression domain interfaces. The transmembrane ligand ephrin-B2 and its receptor tyrosine kinase EphB4 are specifically expressed on arterial and venous endothelial cells, respectively. Bidirectional signals mediated by both proteins play an important role in vascular development. Ephrin-B2 is essential for the normal morphogenesis of the embryonic vasculature and is angiogenic in tumors. It has been identified as an important target of chemotherapeutic treatments.

REFERENCES

1. Mellitzer, G., et al. 1999. Eph receptors and ephrins restrict cell intermingling and communication. Nature 400: 77-81.
2. Jensen, P.L. 2000. Eph receptors and ephrins. Stem Cells 18: 63-64.
3. Nakamoto, M., et al. 2002. Diverse roles for the Eph family of receptor tyrosine kinases in carcinogenesis. Microsc. Res. Tech. 59: 58-67.
4. Hamada, K., et al. 2003. Distinct roles of ephrin-B2 forward and EphB4 reverse signaling in endothelial cells. Arterioscler. Thromb. Vasc. Biol. 23: 190-197.
5. Dravis, C., et al. 2004. Bidirectional signaling mediated by ephrin-B2 and EphB2 controls urorectal development. Dev. Biol. 271: 272-290.
6. Liu, W., et al. 2004. Effects of overexpression of ephrin-B2 on tumour growth in human colorectal cancer. Br. J. Cancer 90: 1620-1626.

CHROMOSOMAL LOCATION

Genetic locus: Efnb2 (mouse) mapping to 8 A1.1.

PRODUCT

ephrin-B2 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 ephrin-B2 shRNA Plasmid (m): sc-39439-SH and ephrin-B2 shRNA (m) Lentiviral Particles: sc-39439-V as alternate gene silencing products.

For independent verification of ephrin-B2 (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-39439A, sc-39439B and sc-39439C.

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.

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

ephrin-B2 siRNA (m) is recommended for the inhibition of ephrin-B2 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.

GENE EXPRESSION MONITORING

ephrin-B2 (F-2): sc-398735 is recommended as a control antibody for monitoring of ephrin-B2 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 ephrin-B2 gene expression knockdown using RT-PCR Primer: ephrin-B2 (m)-PR: sc-39439-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.