SANTA CRUZ BIOTECHNOLOGY, INC.

ephrin-B1 siRNA (m): sc-39437

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. Ephrin-B1 transduces outside-in signals through C-terminal protein interactions that effect integrin-mediated cell attachment and migration. The distribution of ephrin-B1 in the developing retina suggests that it influences retinal axon mapping along the dorsal-ventral axis and may be involved in intratectal development.

REFERENCES

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2. Mellitzer, G., et al. 1999. Eph receptors and ephrins restrict cell intermingling and communication. Nature 400: 77-81.
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4. Huynh-Do, U., et al. 2002. Ephrin-B1 transduces signals to activate integrin-mediated migration, attachment, and angiogenesis. J. Cell Sci. 115: 3073-3081.
5. Nagashima, K., et al. 2002. Adaptor protein Crk is required for ephrin-B1-induced membrane ruffling and focal complex assembly of human aortic endothelial cells. Mol. Biol. Cell 13: 4231-4242.
6. Xu, Z., et al. 2003. Ephrin-B1 reverse signaling activates JNK through a novel mechanism that is independent of tyrosine phosphorylation. J. Biol. Chem. 278: 24767-24775.
7. Twigg, S.R., et al. 2004. Mutations of ephrin-B1 (EFNB1), a marker of tissue boundary formation, cause craniofrontonasal syndrome. Proc. Natl. Acad. Sci. USA 101: 8652-8657.
8. Tanaka, M., et al. 2004. Tiam1 mediates neurite outgrowth induced by ephrin-B1 and EphA2. EMBO J. 23: 1075-1088.

CHROMOSOMAL LOCATION

Genetic locus: Efnb1 (mouse) mapping to X C3.

PRODUCT

ephrin-B1 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-B1 shRNA Plasmid (m): sc-39437-SH and ephrin-B1 shRNA (m) Lentiviral Particles: sc-39437-V as alternate gene silencing products.

For independent verification of ephrin-B1 (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-39437A, sc-39437B and sc-39437C.

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-B1 siRNA (m) is recommended for the inhibition of ephrin-B1 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 ephrin-B1 gene expression knockdown using RT-PCR Primer: ephrin-B1 (m)-PR: sc-39437-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.