SANTA CRUZ BIOTECHNOLOGY, INC.

EphA7 siRNA (m): sc-39942

BACKGROUND

The Eph subfamily represents the largest group of receptor protein tyrosine kinases identified to date. The Eph subfamily receptors of human origin (and their murine/avian homologs) include EphA1 (Eph), EphA2 (Eck), EphA3 (Hek4), EphA4 (Hek8), EphA5 (Hek7), EphA6 (Hek12), EphA7 (Hek11/MDK1), EphA8 (Hek3), EphB1 (Hek6), EphB2 (Hek5), EphB3 (Cek10, Hek2), EphB4 (Htk), EphB5 (Hek9) and EphB6 (Mep). EphAs are a family of receptor tyrosine kinases that are involved in axonal guidance during development. These receptors and their ligands, the ephrins, act via repulsive mechanisms to guide growing axons towards their appropriate targets and allow for the correct developmental connections to be made. Ligand binding to an Eph receptor results in tyrosine phosphorylation of the kinase domain, and repulsion of axonal growth cones and migrating cells. During neurulation, ephrin-A5 is coexpressed with its cognate receptor EphA7 in cells at the edges of the dorsal neural folds. Three different EphA7 splice variants, a full length form and two truncated versions lacking kinase domains, are expressed in the neural folds.

REFERENCES

1. Ciossek, T., et al. 1995. Identification of alternatively spliced mRNAs encoding variants of MDK1, a novel receptor tyrosine kinase expressed in the murine nervous system. Oncogene 10: 97-108.
2. Fox, G.M., et al. 1995. DNA cloning and tissue distribution of five human Eph-like receptor protein-tyrosine kinases. Oncogene 10: 897-905.
3. Valenzuela, D.M., et al. 1995. Identification of full-length and truncated forms of Ehk-3, a novel member of the Eph receptor tyrosine kinase family. Oncogene 10: 1573-1580.
4. Holmberg, J., et al. 2000. Regulation of repulsion versus adhesion by different splice forms of an Eph receptor. Nature 408: 203-206.
5. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 602190. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Willson, C.A., et al. 2002. Upregulation of EphA receptor expression in the injured adult rat spinal cord. Cell Transplant. 11: 229-239.

CHROMOSOMAL LOCATION

Genetic locus: Epha7 (mouse) mapping to 4 A4.

PRODUCT

EphA7 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 EphA7 shRNA Plasmid (m): sc-39942-SH and EphA7 shRNA (m) Lentiviral Particles: sc-39942-V as alternate gene silencing products.

For independent verification of EphA7 (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-39942A, sc-39942B and sc-39942C.

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

EphA7 siRNA (m) is recommended for the inhibition of EphA7 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

EphA7 (E-7): sc-393973 is recommended as a control antibody for monitoring of EphA7 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 EphA7 gene expression knockdown using RT-PCR Primer: EphA7 (m)-PR: sc-39942-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. Kim, Y.J., et al. 2016. EphA7 regulates spiral ganglion innervation of cochlear hair cells. Dev. Neurobiol. 76: 452-469.

RESEARCH USE

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