SANTA CRUZ BIOTECHNOLOGY, INC.

EphA2 siRNA (h): sc-29304

BACKGROUND

The Eph subfamily represents the largest group of receptor protein tyrosine kinases identified to date. While the biological activities of these receptors have yet to be determined, there is increasing evidence that they are involved in central nervous system function and in development. 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). Ligands for Eph receptors include ephrin-A4 (LERK-4) which binds EphA3 and EphB1. In addition, ephrin-A2 (ELF-1) has been described as the ligand for EphA4, ephrin-A3 (Ehk1-L) as the ligand for EphA5 and ephrin-B2 (Htk-L) as the ligand for EphB4 (Htk).

CHROMOSOMAL LOCATION

Genetic locus: EPHA2 (human) mapping to 1p36.13.

PRODUCT

EphA2 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 EphA2 shRNA Plasmid (h): sc-29304-SH and EphA2 shRNA (h) Lentiviral Particles: sc-29304-V as alternate gene silencing products.

For independent verification of EphA2 (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-29304A, sc-29304B and sc-29304C.

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

EphA2 siRNA (h) is recommended for the inhibition of EphA2 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

EphA2 (C-3): sc-398832 is recommended as a control antibody for monitoring of EphA2 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor EphA2 gene expression knockdown using RT-PCR Primer: EphA2 (h)-PR: sc-29304-PR (20 µl, 527 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

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4. Faoro, L., et al. 2010. EphA2 mutation in lung squamous cell carcinoma promotes increased cell survival, cell invasion, focal adhesions, and mammalian target of rapamycin activation. J. Biol. Chem. 285: 18575-18585.
5. Guo, C., et al. 2013. Prognostic significance of combinations of RNA-dependent protein kinase and EphA2 biomarkers for NSCLC. J. Thorac. Oncol. 8: 301-308.
6. Neill, T., et al. 2016. EphA2 is a functional receptor for the growth factor progranulin. J. Cell Biol. 215: 687-703.
7. Wang, X., et al. 2017. Male hormones activate EphA2 to facilitate Kaposi's sarcoma-associated herpesvirus infection: implications for gender disparity in Kaposi's sarcoma. PLoS Pathog. 13: e1006580.
8. Hong, H.N., et al. 2018. Cancer-associated fibroblasts promote gastric tumorigenesis through EphA2 activation in a ligand-independent manner. J. Cancer Res. Clin. Oncol. 144: 1649-1663.
9. Swidergall, M., et al. 2018. EphA2 is an epithelial cell pattern recognition receptor for fungal β-glucans. Nat. Microbiol. 3: 53-61.
10. Kim, H.S., et al. 2019. Morphological characteristics of vasculogenic mimicry and its correlation with EphA2 expression in gastric adenocarcinoma. Sci. Rep. 9: 3414.
11. Kim, H.S., et al. 2019. Role of EphA2-PI3K signaling in vasculogenic mimicry induced by cancer-associated fibroblasts in gastric cancer cells. Oncol. Lett. 18: 3031-3038.

RESEARCH USE

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