SANTA CRUZ BIOTECHNOLOGY, INC.

EDG-7 siRNA (h): sc-37088

BACKGROUND

The EDG (endothelial differentiation gene) family of G protein-coupled receptors consists of eight family members that bind lysophospholipid (LPL) mediators, including sphingosine-1-phosphate (SPP) and lysophosphatidic acid (LPA). EDG-1, EDG-3, EDG-5 (also designated H218 and AGR16) and EDG-8 bind SPP with high affinity. EDG-6 is a low affinity receptor for SPP. LPA preferentially binds to EDG-2, EDG-4 and EDG-7. The EDG receptors couple to multiple G proteins to signal through Ras, MAP kinase, Rho, Phospholipase C or other tyrosine kinases, which lead to cell survival, growth, migration and differentiation. EDG-1 signals through G_i proteins to activate Akt and is expressed in glioma cells. EDG-2 is expressed in brain, especially in white matter tract regions, while EDG-3 is expressed in cardiovascular tissue and in cerebellum. EDG-4 is highly expressed on leukocytes and brain, and EDG-5 has wide tissue distribution, including cardiovascular tissue and brain. EDG-6, which is expressed in lymphoid and hematopoietic tissues and in lung, signals through $G_{i/o}$ proteins, which activate growth related pathways.

REFERENCES

1. Goetzl, E.J. and An, S. 1999. A subfamily of G protein-coupled cellular receptors for lysophospholipids and lysosphingolipids. Adv. Exp. Med. Biol. 469: 259-264.
2. Van Brocklyn, J.R., et al. 2000. Sphingosine-1-phosphate is a ligand for the G protein-coupled receptor EDG-6. Blood 95: 2624-2629.

CHROMOSOMAL LOCATION

Genetic locus: LPAR3 (human) mapping to 1p22.3.

PRODUCT

EDG-7 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 EDG-7 shRNA Plasmid (h): sc-37088-SH and EDG-7 shRNA (h) Lentiviral Particles: sc-37088-V as alternate gene silencing products.

For independent verification of EDG-7 (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-37088A, sc-37088B and sc-37088C.

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

EDG-7 siRNA (h) is recommended for the inhibition of EDG-7 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

EDG-7 (C-7): sc-390270 is recommended as a control antibody for monitoring of EDG-7 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 EDG-7 gene expression knockdown using RT-PCR Primer: EDG-7 (h)-PR: sc-37088-PR (20 µl, 592 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chen, S.U., et al. 2008. Lysophosphatidic acid up-regulates expression of interleukin-8 and -6 in granulosa-lutein cells through its receptors and nuclear factor-κB dependent pathways: implications for angiogenesis of corpus luteum and ovarian hyperstimulation syndrome. J. Clin. Endocrinol. Metab. 93: 935-943.
2. Lin, C.E., et al. 2012. Lysophosphatidic acid enhances vascular endothelial growth factor-C expression in human prostate cancer PC-3 cells. PLoS ONE 7: e41096.
3. Chen, R.J., et al. 2012. Lysophosphatidic acid receptor 2/3-mediated IL-8-dependent angiogenesis in cervical cancer cells. Int. J. Cancer 131: 789-802.
4. Cai, Q., et al. 2012. Elevated and secreted phospholipase A_2 activities as new potential therapeutic targets in human epithelial ovarian cancer. FASEB J. 26: 3306-3320.
5. Lin, C.C., et al. 2013. Lysophosphatidic acid induces reactive oxygen species generation by activating protein kinase C in PC-3 human prostate cancer cells. Biochem. Biophys. Res. Commun. 440: 564-569.
6. Lin, Y.C., et al. 2018. LPA1/3 signaling mediates tumor lymphangiogenesis through promoting CRT expression in prostate cancer. Biochim. Biophys. Acta Mol. Cell Biol. Lipids 1863: 1305-1315.

RESEARCH USE

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