SANTA CRUZ BIOTECHNOLOGY, INC.

ECSCR siRNA (m): sc-108146

BACKGROUND

ECSCR (endothelial cell-specific chemotaxis regulator), also known as ARIA or ECSM2, is a 205 amino acid single-pass type I membrane protein belonging to the ECSCR family. Expressed in endothelial-specific cells and blood vessels, ECSCR interacts with Filamin 1 and regulates endothelial chemotaxis and tube formation. It is suggested that ECSCR participates in suppressing tyrosine phosphorylation signaling, cell-shape changes and Actin cytoskeletal rearrangement. ECSCR reduces the signal of the Shc-Ras-ERK pathway thereby decreasing EGF-induced cell migration by communicating with EGFR (epidermal growth factor receptor). It is thought that ECSCR uniquely regulates both endothelial apoptosis and angiogenesis by modulating proteasomal degradation of c-IAP1 and c-IAP2 in endothelial cells. Evolutionarily conserved, ECSCR plays a pivotal role in the pathogenesis of many angiogenesis-related diseases.

REFERENCES

1. Permana, P.A., et al. 2004. Subcutaneous abdominal preadipocyte differentiation *in vitro* inversely correlates with central obesity. Am. J. Physiol. Endocrinol. Metab. 286: E958-E962.
2. Komaletdinova, F.M., et al. 2006. The filamin in cell signaling. Tsitologiia 48: 924-934.
3. Armstrong, L.J., et al. 2008. ECSM2, an endothelial specific filamin a binding protein that mediates chemotaxis. Arterioscler. Thromb. Vasc. Biol. 28: 1640-1646.
4. Verissimo, A.R., et al. 2009. Functionally defining the endothelial transcriptome, from Robo4 to ECSCR. Biochem. Soc. Trans. 37: 1214-1217.
5. Ma, F., et al. 2009. Endothelial cell-specific molecule 2 (ECSM2) modulates actin remodeling and epidermal growth factor receptor signaling. Genes Cells 14: 281-293.
6. Ikeda, K., et al. 2009. Identification of ARIA regulating endothelial apoptosis and angiogenesis by modulating proteasomal degradation of cIAP-1 and cIAP-2. Proc. Natl. Acad. Sci. USA 106: 8227-8232.
7. Verma, A., et al. 2010. Endothelial cell-specific chemotaxis receptor (ECSCR) promotes angioblast migration during vasculogenesis and enhances VEGF receptor sensitivity. Blood 115: 4614-4622.

CHROMOSOMAL LOCATION

Genetic locus: Ecscr (mouse) mapping to 18 B2.

PRODUCT

ECSCR 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 ECSCR shRNA Plasmid (m): sc-108146-SH and ECSCR shRNA (m) Lentiviral Particles: sc-108146-V as alternate gene silencing products.

For independent verification of ECSCR (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-108146A, sc-108146B and sc-108146C.

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

ECSCR siRNA (m) is recommended for the inhibition of ECSCR 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 ECSCR gene expression knockdown using RT-PCR Primer: ECSCR (m)-PR: sc-108146-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.