SANTA CRUZ BIOTECHNOLOGY, INC.

VCAM-1 siRNA (h): sc-29519

BACKGROUND

Cell adhesion molecules are a family of closely related cell surface glycoproteins involved in cell-cell interactions during growth and are thought to play an important role in embryogenesis and development. Neuronal cell adhesion molecule (NCAM) expression is observed in a variety of human tumors including neuroblastomas, rhabdomyosarcomas, Wilms' tumors, Ewing's sarcomas and some primitive myeloid malignancies. The intracellular adhesion molecule-1 (ICAM-1), also referred to as CD54, is an integral membrane protein of the immunoglobulin superfamily and recognizes the B2α1 and B2αM integrins. PECAM-1 (platelet/endothelial cell adhesion molecule-1), also referred to as CD31, is a glycoprotein expressed on the cell surfaces of monocytes, neutrophils, platelets and a subpopulation of T cells. VCAM-1 (vascular cell adhesion molecule-1) was first identified as an adhesion molecule induced on human endothelial cells by inflammatory cytokines such as IL-1, tumor necrosis factor (TNF) and lipopolysaccharide (LPS). The KALIG gene encodes a nerve cell adhesion molecule (NCAM)-like protein and is deleted in 66% of patients with Kallmann's syndrome, anosmia with secondary hypogonadism.

CHROMOSOMAL LOCATION

Genetic locus: VCAM1 (human) mapping to 1p21.2.

PRODUCT

VCAM-1 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 VCAM-1 shRNA Plasmid (h): sc-29519-SH and VCAM-1 shRNA (h) Lentiviral Particles: sc-29519-V as alternate gene silencing products.

For independent verification of VCAM-1 (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-29519A, sc-29519B and sc-29519C.

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

VCAM-1 siRNA (h) is recommended for the inhibition of VCAM-1 expression in human cells.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

VCAM-1 (E-10): sc-13160 is recommended as a control antibody for monitoring of VCAM-1 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 VCAM-1 gene expression knockdown using RT-PCR Primer: VCAM-1 (h)-PR: sc-29519-PR (20 µl, 471 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Nizamutdinova, I.T., et al. 2008. Tanshinone I suppresses growth and invasion of human breast cancer cells, MDA-MB-231, through regulation of adhesion molecules. Carcinogenesis 29: 1885-1892.
2. Tai, H.C., et al. 2014. Osteoblast-derived Wnt-induced secreted protein 1 increases VCAM-1 expression and enhances prostate cancer metastasis by down-regulating miR-126. Oncotarget 5: 7589-7598.
3. Sun, H.J., et al. 2016. Salusin-β induces foam cell formation and monocyte adhesion in human vascular smooth muscle cells via miR155/NOX2/NFκB pathway. Sci. Rep. 6: 23596.
4. Labrousse-Arias, D., et al. 2017. VHL promotes immune response against renal cell carcinoma via NFκB-dependent regulation of VCAM-1. J. Cell Biol. 216: 835-847.
5. Prangsaengtong, O., et al. 2018. Aspirin suppresses components of lymphangiogenesis and lymphatic vessel remodeling by inhibiting the NFκB/VCAM-1 pathway in human lymphatic endothelial cells. Vasc. Med. 23: 201-211.
6. Cheng, C.Y., et al. 2022. CORM-2 prevents human gingival fibroblasts from lipoteichoic acid-induced VCAM-1 and ICAM-1 expression by inhibiting TLR2/MyD88/TRAF6/PI3K/Akt/ROS/NF-κB signaling pathway. Biochem. Pharmacol. 201: 115099.

RESEARCH USE

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