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CD26 siRNA (h): sc-42762

BACKGROUND

CD26 (dipeptidylpeptidase 4, adenosine deaminase complexing protein 2, ADABP, ADCP2, DPPIV, TP103) is a membrane glycoprotein and a serine exopeptidase that cleaves X-proline dipeptides from the N-terminus of polypeptides. CD26 has an essential role in immune regulation as a T cell activation molecule and a regulator of chemokine function. CD26 associates with CXCR4 and gp120 and may influence the pathophysiology of HIV infection. Adenosine deaminase (ADA) colocalizing with adenosine receptors on dendritic cells are able to interact with CD26 expressed on lymphocytes. This costimulatory signal in the immunological synapse leads to an increase in the production of the T helper 1 and proinflammatory cytokines IFN- γ , TNF α and IL-6. CD26 plays a role in the pathogenesis and behavior of human cancers, including solid tumors and hematological malignancies. CD26-caveolin-1 interaction plays a role in the upregulation of CD86 on TT-loaded monocytes and subsequent engagement with CD28 on T cells, leading to antigen-specific T cell activation.

REFERENCES

1. McMaster, W.R., et al. 1979. Identification of Ia glycoproteins in rat thymus and purification from rat spleen. *Eur. J. Immunol.* 9: 426-433.
2. Dang, N.H., et al. 1991. 1F7 (CD26): a marker of thymic maturation involved in the differential regulation of the CD3 and CD2 pathways of human thymocyte activation. *J. Immunol.* 147: 2825-2832.

CHROMOSOMAL LOCATION

Genetic locus: DPP4 (human) mapping to 2q24.2.

PRODUCT

CD26 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CD26 shRNA Plasmid (h): sc-42762-SH and CD26 shRNA (h) Lentiviral Particles: sc-42762-V as alternate gene silencing products.

For independent verification of CD26 (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-42762A, sc-42762B and sc-42762C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CD26 siRNA (h) is recommended for the inhibition of CD26 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 μ M in 66 μ l. 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

CD26 (202.36): sc-7633 is recommended as a control antibody for monitoring of CD26 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 CD26 gene expression knockdown using RT-PCR Primer: CD26 (h)-PR: sc-42762-PR (20 μ l, 414 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, Z., et al. 2009. A CD26-controlled cell surface cascade for regulation of T cell motility and chemokine signals. *J. Immunol.* 183: 3616-3624.
2. Ishii, M., et al. 2014. Vildagliptin stimulates endothelial cell network formation and ischemia-induced revascularization via an endothelial nitric oxide synthase-dependent mechanism. *J. Biol. Chem.* 289: 27235-27245.
3. Onoyama, H., et al. 2016. Rapid and sensitive detection of early esophageal squamous cell carcinoma with fluorescence probe targeting dipeptidylpeptidase IV. *Sci. Rep.* 6: 26399.
4. Al-Qahtani, A.A., et al. 2017. Middle east respiratory syndrome corona virus spike glycoprotein suppresses macrophage responses via DPP4-mediated induction of IRAK-M and PPAR γ . *Oncotarget* 8: 9053-9066.
5. Hiromura, M., et al. 2018. Caveolin-1, a binding protein of CD26, is essential for the anti-inflammatory effects of dipeptidyl peptidase-4 inhibitors on human and mouse macrophages. *Biochem. Biophys. Res. Commun.* 495: 223-229.

RESEARCH USE

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