SANTA CRUZ BIOTECHNOLOGY, INC.

CD47 siRNA (h): sc-35006

BACKGROUND

CD47 is an integral membrane protein that plays a role in the regulation of cation fluxes across cell membranes. Specifically, CD47 is involved in the increase in intracellular calcium concentration that occurs upon cell adhesion to the extracellular matrix. It is also a receptor for the C-terminal cell binding domain of thrombospondin (SIRP). CD47 is absent from Rh-null erythrocytes, but does play a role in cell adhesion in non-erythroid cells and may prevent premature elimination of erythrocytes. It may also be involved in membrane permeability changes following viral infection. CD47 is expressed on hemopoietic cells, epithelial cells, endothelial cells and fibroblasts and is strongly expressed in brain and mesenchymal cells.

REFERENCES

1. Boerman, O., et al. 1989. Monoclonal antibodies against ovarian carcinoma-associated antigens, raised by immunization with cyst fluids. Anticancer Res. 9: 551-558.
2. Knapp, W., et al. 1989. Leukocyte Typing IV: White Cell Differentiation Antigens. New York: Oxford University Press.
3. Van Niekerk, C.C., et al. 1993. Changes in expression of differentiation markers between normal ovarian cells and derived tumors. Am. J. Pathol. 142: 157-177.

CHROMOSOMAL LOCATION

Genetic locus: CD47 (human) mapping to 3q13.12.

PRODUCT

CD47 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 CD47 shRNA Plasmid (h): sc-35006-SH and CD47 shRNA (h) Lentiviral Particles: sc-35006-V as alternate gene silencing products.

For independent verification of CD47 (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-35006A, sc-35006B and sc-35006C.

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

CD47 siRNA (h) is recommended for the inhibition of CD47 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

CD47 (B6H12): sc-12730 is recommended as a control antibody for monitoring of CD47 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 CD47 gene expression knockdown using RT-PCR Primer: CD47 (h)-PR: sc-35006-PR (20 µl, 458 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sakakura, K., et al. 2016. Relationship between tumor-associated macrophage subsets and CD47 expression in squamous cell carcinoma of the head and neck in the tumor microenvironment. Lab. Invest. 96: 994-1003.
2. Courageot, M.P., et al. 2020. Thrombospondin-1 receptor CD47 overexpression contributes to P-glycoprotein-mediated multidrug resistance against doxorubicin in thyroid carcinoma FTC-133 cells. Front. Oncol. 10: 551228.
3. Jahan, J., et al. 2022. Transforming growth factor-β1/Thrombospondin-1/CD47 axis mediates dysfunction in $CD34^+$ cells derived from diabetic older adults. Eur. J. Pharmacol. 920: 174842.
4. Hassan, E.M. and Zou, S. 2022. Novel nanocarriers for silencing anti-phagocytosis CD47 marker in acute myeloid leukemia cells. Colloids Surf. B, Biointerfaces 217: 112609.

RESEARCH USE

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