SANTA CRUZ BIOTECHNOLOGY, INC.

CD39 siRNA (m): sc-42786

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The Power to Question

BACKGROUND

CD39, also known as ectonucleoside triphosphate diphosphohydrolase 1 (ENP1), is an integral membrane glycoprotein that acts as an extracellular nucleotide-hydrolyzing enzyme. CD39 inhibits ADP-induced platelet aggregation by hydrolyzing ADP to AMP, and ultimately generating Adenosine. Intracellular CD39 undergoes glycosylation at six N-glycosylation sites and translocates to the membrane in order to be an active enzyme. Alternative splicing gives rise to three CD39 isoforms, vascular, placenta I and placenta II. The placenta I isoform differs at the amino terminus whereas the placenta II isoform is missing amino acids 300-510 at the C-terminus. CD39 is expressed in vascular tissues including placenta, lung, skeletal muscle and kidney, as well as endothelium, smooth muscle, cardiac cells, lymphocytes, such as activated B cells, activated NK cells, macrophages, Dendridic cells and platelets. CD39 may be used as an anti-thrombic agent for pre-treating patients at risk for coronary artery occlusion and thrombic stroke.

REFERENCES

1. Kansas, G.S., et al. 1991. Expression, distribution and biochemistry of human CD39. Role in activation-associated homotypic adhesion of lymphocytes. J. Immunol. 146: 2235-2244.
2. Kaczmarek, E., et al. 1996. Identification and characterization of CD39/vascular ATP diphosphohydrolase. J. Biol. Chem. 271: 33116-33122.
3. Marcus, A.J., et al. 2001. Inhibition of platelet recruitment by endothelial cell CD39/ecto-ADPase: significance for occlusive vascular diseases. Ital. Heart J. 2: 824-830.
4. Zhong, X., et al. 2001. Mammalian plasma membrane ecto-nucleoside triphosphate diphosphohydrolase 1, CD39, is not active intracellularly. The N-glycosylation state of CD39 correlates with surface activity and localization. J. Biol. Chem. 276: 41518-41525.
5. Kittel, A., et al. 2002. Localization of NTPDase1/CD39 in normal and transformed human pancreas. J. Histochem. Cytochem. 50: 549-556.
6. SWISS-PROT/TrEMBL (P49961). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: Entpd1 (mouse) mapping to 19 C3.

PRODUCT

CD39 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 CD39 shRNA Plasmid (m): sc-42786-SH and CD39 shRNA (m) Lentiviral Particles: sc-42786-V as alternate gene silencing products.

For independent verification of CD39 (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-42786A, sc-42786B and sc-42786C.

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

CD39 siRNA (m) is recommended for the inhibition of CD39 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 CD39 gene expression knockdown using RT-PCR Primer: CD39 (m)-PR: sc-42786-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cui, M., et al. 2016. Mdivi-1 mrotects against ischemic brain injury via elevating extracellular adenosine in a cAMP/CREB-CD39-dependent manner. Mol. Neurobiol. 53: 240-253.
2. Su, W., et al. 2019. The cAMP-adenosine feedback loop maintains the suppressive function of regulatory T cells. J. Immunol. 203: 1436-1446.

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.