

Adenosine A2A-R siRNA (m): sc-39851

BACKGROUND

Adenosine is involved in a variety of processes, including the synthesis of urea, the anti-inflammatory response, and the inhibition of protein synthesis. The Adenosine receptors, including Adenosine A1-R, Adenosine A2A-R, Adenosine A2B-R and Adenosine A3-R, are integral membrane proteins that are members of the G protein-coupled receptor family. Adenosine A1-R mediates ureagenesis in a partially calcium-dependent manner. Adenosine is known to mediate coronary vasodilation via Adenosine A2A-R. Collagen synthesis and total protein synthesis are inhibited in certain cells by Adenosine, acting via the A2B receptors. Activation of Adenosine A3-R inhibits the induction of TNF α and blocks the endotoxin CD14 receptor signal transduction pathway.

CHROMOSOMAL LOCATION

Genetic locus: Adora2a (mouse) mapping to 10 C1.

PRODUCT

Adenosine A2A-R 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Adenosine A2A-R shRNA Plasmid (m): sc-39851-SH and Adenosine A2A-R shRNA (m) Lentiviral Particles: sc-39851-V as alternate gene silencing products.

For independent verification of Adenosine A2A-R (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-39851A, sc-39851B and sc-39851C.

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

Adenosine A2A-R siRNA (m) is recommended for the inhibition of Adenosine A2A-R 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 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

Adenosine A2A-R (7F6-G5-A2): sc-32261 is recommended as a control antibody for monitoring of Adenosine A2A-R 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 Adenosine A2A-R gene expression knockdown using RT-PCR Primer: Adenosine A2A-R (m)-PR: sc-39851-PR (20 μ l, 596 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Thakur, S., et al. 2010. Inactivation of adenosine A_{2A} receptor attenuates basal and Angiotensin II-induced ROS production by Nox2 in endothelial cells. *J. Biol. Chem.* 285: 40104-40113.
2. Campo, G.M., et al. 2012. The stimulation of adenosine 2A receptor reduces inflammatory response in mouse articular chondrocytes treated with hyaluronan oligosaccharides. *Matrix Biol.* 31: 338-351.
3. Campo, G.M., et al. 2012. Protein kinase a mediated anti-inflammatory effects exerted by adenosine treatment in mouse chondrocytes stimulated with IL-1 β . *Biofactors* 38: 429-439.
4. Choudhary, S.A., et al. 2019. A novel small molecule A_{2A} adenosine receptor agonist, indirubin-3'-monoxime, alleviates lipid-induced inflammation and Insulin resistance in 3T3-L1 adipocytes. *Biochem. J.* 476: 2371-2391.
5. Masjedi, A., et al. 2019. Downregulation of A2AR by siRNA loaded PEG-chitosan-lactate nanoparticles restores the T cell mediated anti-tumor responses through blockage of PKA/CREB signaling pathway. *Int. J. Biol. Macromol.* 133: 436-445.

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.