

Adenosine A3-R siRNA (m): sc-39855

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.

REFERENCES

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- Pierce, K.D., et al. 1992. Molecular cloning and expression of an Adenosine A_{2B} receptor from human brain. *Biochem. Biophys. Res. Commun.* 187: 86-93.
- Salvatore, C.A., et al. 1993. Molecular cloning and characterization of the human A₃ Adenosine receptor. *Proc. Natl. Acad. Sci. USA* 90: 10365-10369.
- McWhinney, C.D., et al. 1996. Activator of Adenosine A₃ receptors on macrophages inhibits tumor necrosis factor α . *Eur. J. Pharmacol.* 310: 209-216.
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- Belardinelli, L., et al. 1998. The A_{2A} Adenosine receptor mediates coronary vasodilation. *J. Pharmacol. Exp. Ther.* 284: 1066-1073.
- Dubey, R.K., et al. 1998. Adenosine inhibits growth of human aortic smooth muscle cells via A_{2B} receptors. *Hypertension* 31: 516-521.

CHROMOSOMAL LOCATION

Genetic locus: Adora3 (mouse) mapping to 3 F2.2.

PRODUCT

Adenosine A3-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 A3-R shRNA Plasmid (m): sc-39855-SH and Adenosine A3-R shRNA (m) Lentiviral Particles: sc-39855-V as alternate gene silencing products.

For independent verification of Adenosine A3-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-39855A, sc-39855B and sc-39855C.

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 A3-R siRNA (m) is recommended for the inhibition of Adenosine A3-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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Adenosine A3-R gene expression knockdown using RT-PCR Primer: Adenosine A3-R (m)-PR: sc-39855-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Gessi, S., et al. 2013. A₁ and A₃ adenosine receptors inhibit LPS-induced hypoxia-inducible factor-1 accumulation in murine astrocytes. *Pharmacol. Res.* 76: 157-170.

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.