

α_{1A} -AR siRNA (h): sc-39858

BACKGROUND

α_{1A} -adrenergic receptors (α_{1A} -ARs) mediate actions in the sympathetic nervous system through the binding of the catecholamines, epinephrine and nor-epinephrine. α_{1A} -AR (previously designated α_{1C} -AR) couples to $G_{q/11}$ and regulates blood pressure due to changes in vascular tone and cardiac output. Alternative splicing of the ADRA1A gene generates four isoforms with distinct C-termini, and the different expression profile of these subtypes produces distinct patterns of activation. α_{1A} -AR transcripts are abundant in heart, brain, liver and prostate. α_{1A} -AR transcript sizes of 6.0, 4.0, 3.0, and 2.0 kb have been detected in liver. Transcripts of 6.0, 4.0 and 3.0 kb have been detected in heart, and transcripts of 6.0 and 4.0 kb have been detected in prostate.

REFERENCES

- Hirasawa, A., et al. 1993. Cloning, functional expression and tissue distribution of human cDNA for the α_{1C} -adrenergic receptor. *Biochem. Biophys. Res. Commun.* 195: 902-909.
- Chang, D.J., et al. 1998. Molecular cloning, genomic characterization and expression of novel human α_{1A} -adrenoceptor isoforms. *FEBS Lett.* 422: 279-283.
- Shibata, K., et al. 2003. α_1 -adrenergic receptor subtypes differentially control the cell cycle of transfected CHO cells through a cAMP-dependent mechanism involving p27^{Kip1}. *J. Biol. Chem.* 278: 672-678.
- Gonzalez-Cabrera, P.J., et al. 2004. Differential regulation of the cell cycle by α_1 -adrenergic receptor subtypes. *Endocrinology* 145: 5157-5167.

CHROMOSOMAL LOCATION

Genetic locus: ADRA1A (human) mapping to 8p21.2.

PRODUCT

α_{1A} -AR 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 α_{1A} -AR shRNA Plasmid (h): sc-39858-SH and α_{1A} -AR shRNA (h) Lentiviral Particles: sc-39858-V as alternate gene silencing products.

For independent verification of α_{1A} -AR (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-39858A, sc-39858B and sc-39858C.

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

α_{1A} -AR siRNA (h) is recommended for the inhibition of α_{1A} -AR 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

α_{1A} -AR (4D8): sc-100291 is recommended as a control antibody for monitoring of α_{1A} -AR 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 α_{1A} -AR gene expression knockdown using RT-PCR Primer: α_{1A} -AR (h)-PR: sc-39858-PR (20 μ l, 417 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Liao, M.H., et al. 2014. The stimulatory effects of α_1 -adrenergic receptors on TGF- β 1, IGF-1 and hyaluronan production in human skin fibroblasts. *Cell Tissue Res.* 357: 681-693.

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.