

# $\alpha_1$ D-AR siRNA (h): sc-29620

## BACKGROUND

$\alpha_1$ D-adrenergic receptors ( $\alpha_1$ D-ARs) couple to  $G_{q/11}$  and participate directly in sympathetic regulation of systemic blood pressure by vasoconstriction.  $\alpha_1$ D-AR can form hetero-oligomers with  $\alpha_1$ B receptors.  $\alpha_1$ D-AR transcripts are abundant in prostate and aorta.  $\alpha_1$ A adrenergic receptors ( $\alpha_1$ A-ARs) mediate actions in the sympathetic nervous system through the binding of the catecholamines, epinephrine and norepinephrine.  $\alpha_1$ A-adrenergic receptors couple to  $G_{q/11}$  and regulate blood pressure due to changes in vascular tone and cardiac output. Alternative splicing of this gene generates four isoforms with distinct C-termini, and the different expression profile of these subtypes produces distinct patterns of activation.  $\alpha_1$ A-AR transcripts are abundant in heart, brain, liver and prostate.  $\alpha_1$ A-AR transcript sizes of 6.0, 4.0, 3.0 and 2.0 kb have been detected in liver.  $\alpha_1$ A-AR transcript sizes of 6.0, 4.0 and 3.0 kb transcripts have been detected in heart, and 6.0 kb and 4.0 kb transcripts have been detected in prostate.

## REFERENCES

1. Hausdorff, W.P., et al. 1990. Two kinases mediate agonist-dependent phosphorylation and desensitization of the  $\beta_2$ -adrenergic receptor. *Symp. Soc. Exp. Biol.* 44: 225-240.
2. Cotecchia, S., et al. 1990. Multiple second messenger pathways of  $\alpha$ -adrenergic receptor subtypes expressed in eukaryotic cells. *J. Biol. Chem.* 265: 63-69.
3. Bertin, B., et al. 1992. Functional expression of the human serotonin 5-HT<sub>1A</sub> receptor in *Escherichia coli*. Ligand binding properties and interaction with recombinant G protein  $\alpha$ -subunits. *J. Biol. Chem.* 267: 8200-8206.
4. Levy, F.O., et al. 1992. Molecular cloning of a human gene (S31) encoding a novel serotonin receptor mediating inhibition of adenylyl cyclase. *FEBS Lett.* 296: 201-206.
5. Weinberg, D.H., et al. 1994. Cloning, expression and characterization of human  $\alpha$  adrenergic receptors  $\alpha_{1a}$ ,  $\alpha_{1b}$  and  $\alpha_{1c}$ . *Biochem. Biophys. Res. Commun.* 201: 1296-1304.

## CHROMOSOMAL LOCATION

Genetic locus: ADRA1D (human) mapping to 20p13.

## PRODUCT

$\alpha_1$ D-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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see  $\alpha_1$ D-AR shRNA Plasmid (h): sc-29620-SH and  $\alpha_1$ D-AR shRNA (h) Lentiviral Particles: sc-29620-V as alternate gene silencing products.

For independent verification of  $\alpha_1$ D-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-29620A, sc-29620B and sc-29620C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

$\alpha_1$ D-AR siRNA (h) is recommended for the inhibition of  $\alpha_1$ D-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  $\mu$ M in 66  $\mu$ 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

$\alpha_1$ D-AR (F-10): sc-390884 is recommended as a control antibody for monitoring of  $\alpha_1$ D-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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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  $\alpha_1$ D-AR gene expression knockdown using RT-PCR Primer:  $\alpha_1$ D-AR (h)-PR: sc-29620-PR (20  $\mu$ l, 491 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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