

# $\alpha_2C$ -AR siRNA (h): sc-29622

## BACKGROUND

$\alpha_2C$ -adrenergic receptors ( $\alpha_2C$ -AR) regulate neurotransmitter release from sympathetic nerves in the heart, and from adrenergic neurons in the central nervous system.  $\alpha_2C$ -AR can influence Parkinson's disease, panic disorders, and Huntington disease (HD) progression. A genetic variant in the  $\alpha_2C$ -AR coding region (Del322-325) renders the receptor partially uncoupled from  $G_i$ , and is a contributing risk factor for heart failure.  $\alpha_2C$ -AR transcripts are present in rat muscle, heart, pancreas, and kidney.

## REFERENCES

1. Eason, M.G., et al. 1993. Human  $\alpha_2$ -adrenergic receptor subtype distribution: widespread and subtype-selective expression of  $\alpha_2C10$ ,  $\alpha_2C4$ , and  $\alpha_2C2$  mRNA in multiple tissues. *Mol. Pharmacol.* 44: 70-75.
2. Riess, O., et al. 1994. Precise mapping of the brain  $\alpha_2$ -adrenergic receptor gene within chromosome 4p16. *Genomics* 19: 298-302.
3. Hein, L., et al. 1999. Two functionally distinct  $\alpha_2$ -adrenergic receptors regulate sympathetic neurotransmission. *Nature* 402: 181-184.
4. Gerson, M.C., et al. 2003. Activity of the uptake-1 norepinephrine transporter as measured by I-123 MIBG in heart failure patients with a loss-of-function polymorphism of the presynaptic  $\alpha_2C$ -adrenergic receptor. *J. Nucl. Cardiol.* 10: 583-589.
5. Small, K.M., et al. 2004. Polymorphisms of cardiac presynaptic  $\alpha_2C$ -adrenergic receptors: diverse intragenic variability with haplotype-specific functional effects. *Proc. Natl. Acad. Sci. USA* 101: 13020-13025.
6. Olave, M.J., et al. 2004. Axon terminals possessing  $\alpha_2C$ -adrenergic receptors densely innervate neurons in the rat lateral spinal nucleus which respond to noxious stimulation. *Neuroscience* 126: 391-403.

## CHROMOSOMAL LOCATION

Genetic locus: ADRA2C (human) mapping to 4p16.3.

## PRODUCT

$\alpha_2C$ -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  $\alpha_2C$ -AR shRNA Plasmid (h): sc-29622-SH and  $\alpha_2C$ -AR shRNA (h) Lentiviral Particles: sc-29622-V as alternate gene silencing products.

For independent verification of  $\alpha_2C$ -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-29622A, sc-29622B and sc-29622C.

## RESEARCH USE

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

## 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

$\alpha_2C$ -AR siRNA (h) is recommended for the inhibition of  $\alpha_2C$ -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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor  $\alpha_2C$ -AR gene expression knockdown using RT-PCR Primer:  $\alpha_2C$ -AR (h)-PR: sc-29622-PR (20  $\mu$ l, 421 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.