SANTA CRUZ BIOTECHNOLOGY, INC.

α_{2B}-AR siRNA (h): sc-39864

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

α_2-adrenergic receptors are members of the G protein-coupled receptor superfamily. They include three highly homologous subtypes: α_{2A}, α_{2B}, and α_{2C}. These receptors have a critical role in regulating neurotransmitter release from sympathetic nerves and from adrenergic neurons in the central nervous system. α_{2B}-adrenergic receptors (α_{2B}-AR) couple to G_i-protein and induce salt-dependent hypertension in response to catecho-lamines. The carboxy-terminal cytoplasmic domain of α_{2B}-AR can associate with proteins, including the guanine nucleotide exchange factor eIF-2B. α_{2B}-AR transcripts are abundant in rat liver and kidney.

REFERENCES

1. Weinshank, R.L., et al. 1990. Cloning, expression, and pharmacological characterization of a human α_{2B}-adrenergic receptor. Mol. Pharmacol. 38: 681-688.
2. Huang, L., et al. 1996. α_{2B}-adrenergic receptors: immunolocalization and regulation by potassium depletion in rat kidney. Am. J. Physiol. 270: F1015-F1026.
3. Klein, U., et al. 1997. A novel interaction between adrenergic receptors and the α-subunit of eukaryotic initiation factor 2B. J. Biol. Chem. 272: 19099-19102.
4. Small, K.M., et al. 2001. Polymorphic deletion of three intracellular acidic residues of the α_{2B}-adrenergic receptor decreases G protein-coupled receptor kinase-mediated phosphorylation and desensitization. J. Biol. Chem. 276: 4917-4922.
5. Madsen, O., et al. 2002. Molecular evolution of the mammalian α_{2B}-adrenergic receptor. Mol. Biol. Evol. 19: 2150-2160.
6. Cussac, D., et al. 2002. α_{2B}-adrenergic receptor activates MAPK via a pathway involving arachidonic acid metabolism, matrix metalloproteinases, and epidermal growth factor receptor transactivation. J. Biol. Chem. 277: 19882-19888.
7. Kintsurashvili, E., et al. 2003. Central α_{2B}-adrenergic receptor antisense in plasmid vector prolongs reversal of salt-dependent hypertension. J. Hypertens. 21: 961-967.

CHROMOSOMAL LOCATION

Genetic locus: ADRA2B (human) mapping to 2q11.1.

PRODUCT

α_{2B}-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see α_{2B}-AR shRNA Plasmid (h): sc-39864-SH and α_{2B}-AR shRNA (h) Lentiviral Particles: sc-39864-V as alternate gene silencing products.

For independent verification of α_{2B}-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-39864A, sc-39864B and sc-39864C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

α_{2B}-AR siRNA (h) is recommended for the inhibition of α_{2B}-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 µM in 66 µl. 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_{2B}-AR (G-9): sc-390430 is recommended as a control antibody for monitoring of α_{2B}-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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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_{2B}-AR gene expression knockdown using RT-PCR Primer: α_{2B}-AR (h)-PR: sc-39864-PR (20 µl, 454 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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.