SANTA CRUZ BIOTECHNOLOGY, INC.

ADM receptor siRNA (h): sc-39856

BACKGROUND

Adrenomedullin (ADM) is a hypotensive peptide that belongs to a peptide superfamily, which includes the calcitonin gene-related peptide (CGRP) and amylin. ADM was originally identified in the adrenal medulla, where it is highly expressed. It is also produced by most contractile cells and is upregulated during sepsis and ischemia. Three distinct receptors have the ability to bind ADM and are designated ADM receptor (also designated L1), RDC-1 and the calcitonin receptor-like receptor (CRLR). The CRLR associates with receptor activity-modifying proteins (RAMPs), which determine the specificity of CRLR binding. Co-expression with RAMP1 results in CRLR binding to CGRP, whereas association with RAMP2 or three results in ADM binding. The ADM receptor, a seven transmembrane G protein-coupled receptor, specifically binds ADM and is highly expressed in heart, brain, skeletal muscle, the immune system, adrenal gland and liver. The ADM receptor mediates the signals produced by ADM through G proteins, which activate adenylate cyclase.

REFERENCES

1. Autelitano, D.J. 1998. Cardiac expression of genes encoding putative adrenomedullin/calcitonin gene-related peptide receptors. Biochem. Biophys. Res. Commun. 250: 689-693.
2. Mazzocchi, G., et al. 1999. Distribution, functional role, and signaling mechanism of adrenomedullin receptors in the rat adrenal gland. Peptides 20: 1479-1487.
3. Renshaw, D., et al. 2000. Adrenomedullin receptor is found exclusively in noradrenaline-secreting cells of the rat adrenal medulla. J. Neurochem. 74: 1766-1772.
4. Ladoux, A., et al. 2000. Coordinated upregulation by hypoxia of adrenomedullin and one of its putative receptors (RDC-1) in cells of the rat blood-brain barrier. J. Biol. Chem. 275: 39914-39919.
5. Hofbauer, K.H., et al. 2000. Tissue hypoxygenation activates the adrenomedullin system *in vivo*. Am. J. Physiol. Regul. Integr. Comp. Physiol. 278: R513-R519.
6. Martinez, A., et al. 2000. Coexpression of receptors for adrenomedullin, calcitonin gene-related peptide, and amylin in pancreatic β-cells. Endocrinology 141: 406-411.
7. Gorbig, M.N., et al. 2001. Human hepatic stellate cells secrete adrenomedullin: potential autocrine factor in the regulation of cell contractility. J. Hepatol. 34: 222-229.
8. Qing, X., et al. 2001. mRNA expression of novel CGRP1 receptors and their activity-modifying proteins in hypoxic rat lung. Am. J. Physiol. Lung Cell. Mol. Physiol. 280: 547-554.

CHROMOSOMAL LOCATION

Genetic locus: GPR182 (human) mapping to 12q13.3.

PROTOCOLS

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

PRODUCT

ADM receptor 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 ADM receptor shRNA Plasmid (h): sc-39856-SH and ADM receptor shRNA (h) Lentiviral Particles: sc-39856-V as alternate gene silencing products.

For independent verification of ADM receptor (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-39856A, sc-39856B and sc-39856C.

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

ADM receptor siRNA (h) is recommended for the inhibition of ADM receptor 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ADM receptor gene expression knockdown using RT-PCR Primer: ADM receptor (h)-PR: sc-39856-PR (20 µl). 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.