SANTA CRUZ BIOTECHNOLOGY, INC.

ADM2 siRNA (h): sc-72452

BACKGROUND

Adrenomedullin (ADM), a vasodilator produced by most contractile cells, is characterized by persistent hypotensive activity. ADM is involved in the regulation of fluid and electrolyte homeostasis and in the maintenance of cardiovascular functioning. In hypertensive patients, the level of ADM in plasma is upregulated. Natriuresis is a common systemic manifestation of aneurysmal subarachnoid hemorrhage. ADM has strong natriuretic actions. ADM-induced natriuresis is caused by an increase in glomerular filtration rate and a decrease in distal tubular sodium reabsorption. ADM is present both in the periphery and brain, and can exert central effects such as decreasing food ingestion. ADM2 (adrenomedullin-2), also known as AM2, IMDS or IMDL, is a 148 amino acid secreted protein that belongs to the adrenomedullin family of Calcitonin-related peptide hormones and is expressed in the esophagus, stomach, jejunum, ileum, ileocecum, ascending colon, transverse colon, descending colon and rectum. ADM2 activates the cAMP-dependent pathway and may play a role in regulating gastrointestinal and cardiovascular bioactivities.

REFERENCES

1. Roh, J., et al. 2004. Intermedin is a Calcitonin/Calcitonin gene-related peptide family peptide acting through the Calcitonin receptor-like receptor/receptor activity-modifying protein receptor complexes. J. Biol. Chem. 279: 7264-7274.
2. Pan, C.S., et al. 2005. Cardiovascular effects of newly discovered peptide intermedin/adrenomedullin 2. Peptides 26: 1640-1646.
3. Takahashi, K., et al. 2006. Immunocytochemical localization of adrenomedullin 2/intermedin-like immunoreactivity in human hypothalamus, heart and kidney. Peptides 27: 1383-1389.
4. Chauhan, M., et al. 2007. Adrenomedullin-2, a novel Calcitonin/Calcitonin-gene-related peptide family peptide, relaxes rat mesenteric artery: influence of pregnancy. Endocrinology 148: 1727-1735.
5. Kindt, F., et al. 2007. Intermedin: a skin peptide that is downregulated in atopic dermatitis. J. Invest. Dermatol. 127: 605-613.
6. Morimoto, R., et al. 2007. Expression of adrenomedullin2/intermedin in human brain, heart, and kidney. Peptides 28: 1095-1103.
7. Hagiwara, M., et al. 2008. Intermedin ameliorates vascular and renal injury by inhibition of oxidative stress. Am. J. Physiol. Renal Physiol. 295: F1735-F1743.
8. Bell, D., et al. 2008. Intermedin (adrenomedullin-2): a novel counter-regulatory peptide in the cardiovascular and renal systems. Br. J. Pharmacol. 153: S247-S262.
9. Hirose, T., et al. 2008. Increased expression of adrenomedullin 2/intermedin in rat hearts with congestive heart failure. Eur. J. Heart Fail. 10: 840-849.

CHROMOSOMAL LOCATION

Genetic locus: ADM2 (human) mapping to 22q13.33.

PROTOCOLS

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

PRODUCT

ADM2 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 ADM2 shRNA Plasmid (h): sc-72452-SH and ADM2 shRNA (h) Lentiviral Particles: sc-72452-V as alternate gene silencing products.

For independent verification of ADM2 (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-72452A, sc-72452B and sc-72452C.

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

ADM2 siRNA (h) is recommended for the inhibition of ADM2 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 ADM2 gene expression knockdown using RT-PCR Primer: ADM2 (h)-PR: sc-72452-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Bell, D., et al. 2016. Endothelium-derived intermedin/adrenomedullin-2 protects human ventricular cardiomyocytes from ischaemia-reoxygenation injury predominantly via the AM_1 receptor. Peptides 76: 1-13.

RESEARCH USE

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