SANTA CRUZ BIOTECHNOLOGY, INC.

AVP siRNA (h): sc-45291

BACKGROUND

Arginine-vasopressin (AVP) is an antidiuretic, neurohypophyseal hormone involved with body fluid homeostasis and is believed to act as an autocrine growth factor in certain cancers, such as breast cancer. The many forms of the AVP precursor have been found in Skbr3 and Mcf7 cells, both at the cell surface and in secreted form. Excessive AVP secretion, regulated by specific and highly sensitive hypothalamic osmoreceptors, increases mean arterial pressure, systemic vascular resistance and stroke volume index via vasopressin V1a- and V2-mediated effects on the peripheral vasculature and on water retention. Myocardial function may be directly and adversely affected by AVP through V1a activation on myocardial contractility and cell growth. A V1-type receptor-mediated pathway caused by AVP has also proven to promote cancer growth through ERK1/2 activation. The antidiuretic action of AVP is regulated by the vasopressin V2 receptor. AVP may also keep migraines in remission, as it promotes antinociception and influences vasomotor and behavior control. These factors make AVP a target for therapy in both acute and chronic heart failure.

REFERENCES

1. Goldsmith, S.R. and Gheorghiade, M. 2005. Vasopressin antagonism in heart failure. J. Am. Coll. Cardiol. 46: 1785-1791.
2. Gupta, V.K. 2005. Recurrent syncope, hypotension, asthma, and migraine with aura: role of metoclopramide. Headache 45: 1413-1415.
3. Luckner, G., et al. 2005. Arginine vasopressin in 316 patients with advanced vasodilatory shock. Crit. Care Med. 33: 2659-2666.
4. Slusarz, M.J., et al. 2005. Investigation of mechanism of desmopressin binding in vasopressin V2 receptor versus vasopressin V1a and oxytocin receptors: molecular dynamics simulation of the agonist-bound state in the membrane-aqueous system. Biopolymers 81: 321-338.
5. Keegan, B.P., et al. 2005. Provasopressin expression by breast cancer cells: implications for growth and novel treatment strategies. Breast Cancer Res. Treat. 95: 265-277.
6. Naeini, R.S., et al. 2006. An N-terminal variant of Trpv1 channel is required for osmosensory transduction. Nat. Neurosci. 9: 93-98.

CHROMOSOMAL LOCATION

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

PRODUCT

AVP siRNA (h) is a target-specific 19-25 nt siRNA 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 AVP shRNA Plasmid (h): sc-45291-SH and AVP shRNA (h) Lentiviral Particles: sc-45291-V as alternate gene silencing products.

PROTOCOLS

See our web site at 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 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

AVP siRNA (h) is recommended for the inhibition of AVP 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

ARG-Vasopressin (VAS 10-2-2): sc-73504 is recommended as a control antibody for monitoring of AVP 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AVP gene expression knockdown using RT-PCR Primer: AVP (h)-PR: sc-45291-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.