SANTA CRUZ BIOTECHNOLOGY, INC.

VPAC1 siRNA (m): sc-40282

BACKGROUND

The vasoactive intestinal peptide (VIP) and the pituitary adenylate cylase-activating polypeptide (PACAP) belong to a superfamily of peptide hormones that include Glucagon, secretin and growth hormone releasing hormone. The effects of VIP and PACAP are mediated by three G protein-coupled receptors, VPAC1, VPAC2 and the PACAP receptor (also designated PAC1-R). The VPAC receptors have equal affinities for VIP and PACAP, which stimulate the activation of adenylyl cyclase. Both VPAC1 and VPAC2 are abundantly expressed in brain and T cells, where they modulate neuronal differentiation and T cell activation, respectively. The PACAP receptor is a seven transmembrane protein that produces at least eight isoforms by alternative splicing. Each isoform is associated with a specific signaling pathway and a specific expression pattern. The PACAP receptor, which is thought to play an integral role in brain development, preferentially binds PACAP in order to stimulate a cAMP-protein kinase A signaling pathway.

REFERENCES

1. Shen, S., et al. 2000. Overexpression of the human VPAC2 receptor in the suprachiasmatic nucleus alters the circadian phenotype of mice. Proc. Natl. Acad. Sci. USA 97: 11575-11580.
2. Shioda, S. 2000. Pituitary adenylate cyclase-activating polypeptide (PACAP) and its receptors in the brain. Kaibogaku Zasshi 75: 487-507.
3. Bajo, A.M., et al. 2000. Expression of vasoactive intestinal peptide (VIP) receptors in human uterus. Peptides 21: 1383-1388.
4. Karacay, B., et al. 2000. Regulation of vasoactive intestinal peptide receptor expression in developing nervous systems. Ann. N.Y. Acad. Sci. 921: 165-174.
5. Vaudry, D., et al. 2000. Pituitary adenylate cyclase-activating polypeptide and its receptors: from structure to functions. Pharmacol. Rev. 52: 269-324.
6. Lara-Marquez, M., et al. 2001. Selective gene expression and activation-dependent regulation of vasoactive intestinal peptide receptor type 1 and type 2 in human T cells. J. Immunol. 166: 2522-2530.
7. Henning, R.J., et al. 2001. Vasoactive intestinal peptide: cardiovascular effects. Cardiovasc. Res. 49: 27-37.

CHROMOSOMAL LOCATION

Genetic locus: Vipr1 (mouse) mapping to 9 F4.

PRODUCT

VPAC1 siRNA (m) 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 VPAC1 shRNA Plasmid (m): sc-40282-SH and VPAC1 shRNA (m) Lentiviral Particles: sc-40282-V as alternate gene silencing products.

For independent verification of VPAC1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-40282A, sc-40282B and sc-40282C.

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

VPAC1 siRNA (m) is recommended for the inhibition of VPAC1 expression in mouse 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 VPAC1 gene expression knockdown using RT-PCR Primer: VPAC1 (m)-PR: sc-40282-PR (20 µl, 515 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.