

PKR1 siRNA (h): sc-72361

BACKGROUND

The prokineticin receptors, PKR1 (GPR73a) and PKR2 (GPR73b), are G protein-coupled receptors responsible for mediating the signal transduction of both EG-VEGF and Prokineticin-2. PKR1 and PKR2 share 87% sequence identity. PKR1 is predominantly expressed in the peripheral tissues and PKR2 is typically expressed in the CNS. Both receptors are found in the testis. Upon ligand binding, PKR1 and PKR2 associate with G protein and can promote intracellular calcium mobilization, stimulate phosphoinositide turnover and activate the MAPK pathway. These receptors play a role in a variety of physiological events such as intestinal contraction, ingestive behavior, spermatogenesis, angiogenesis, circadian rhythm, neuronal survival and hyperalgesia. PKR1 may promote cardiomyocyte survival. PKR2 is essential for the normal development of the olfactory bulb. Mutations in the gene encoding PKR2 may result in Kallmann syndrome type 3.

REFERENCES

1. Lin, D.C., et al. 2002. Identification and molecular characterization of two closely related G protein-coupled receptors activated by prokineticins/endocrine gland vascular endothelial growth factor. *J. Biol. Chem.* 277: 19276-19280.
2. Soga, T., et al. 2002. Molecular cloning and characterization of prokineticin receptors. *Biochim. Biophys. Acta* 1579: 173-179.
3. Battersby, S., et al. 2004. Expression and regulation of the prokineticins (endocrine gland-derived vascular endothelial growth factor and Bv8) and their receptors in the human endometrium across the menstrual cycle. *J. Clin. Endocrinol. Metab.* 89: 2463-2469.
4. Negri, L., et al. 2005. Biological activities of Bv8 analogues. *Br. J. Pharmacol.* 146: 625-632.
5. Chen, J., et al. 2005. Identification and pharmacological characterization of prokineticin-2 β as a selective ligand for prokineticin receptor 1. *Mol. Pharmacol.* 67: 2070-2076.
6. Hoffmann, P., et al. 2006. Expression and oxygen regulation of endocrine gland-derived vascular endothelial growth factor/prokineticin-1 and its receptors in human placenta during early pregnancy. *Endocrinology* 147: 1675-1684.

CHROMOSOMAL LOCATION

Genetic locus: PROKR1 (human) mapping to 2p13.3.

PRODUCT

PKR1 siRNA (h) is a pool of 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PKR1 shRNA Plasmid (h): sc-72361-SH and PKR1 shRNA (h) Lentiviral Particles: sc-72361-V as alternate gene silencing products.

For independent verification of PKR1 (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-72361A and sc-72361B.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PKR1 siRNA (h) is recommended for the inhibition of PKR1 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 μ M in 66 μ l. 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 PKR1 gene expression knockdown using RT-PCR Primer: PKR1 (h)-PR: sc-72361-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, Z., et al. 2021. Gain of LINC00624 enhances liver cancer progression by disrupting the HDAC6-TRIM28-ZNF354C corepressor complex. *Hepatology* 73: 1764-1782.
2. Zhang, X., et al. 2021. Ovarian cancer derived PKR1 positive exosomes promote angiogenesis by promoting migration and tube formation *in vitro*. *Cell Biochem. Funct.* 39: 308-316.

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.