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IP3R-III siRNA (m): sc-42478

BACKGROUND

Inositol 1,4,5-triphosphate (IP3) functions as a second messenger for a myriad of extracellular stimuli including hormones, growth factors and neurotransmitters. Receptor tyrosine kinases indirectly increase the intracellular levels of IP3 through the activation of phospholipases such as phospholipase C (PLC), which convert phosphatidylinositol-4,5 bisphosphate into IP3 and diacylglycerol (DAG). The inositol 1,4,5-triphosphate receptor, IP3R, acts as an inositol triphosphate (IP3)-gated calcium release channel in a variety of cell types. Three IP3 receptor subtypes have been described and are designated IP3R-I, IP3R-II and IP3R-III. IP3R-I is the predominant IP3R subtype expressed in neuronal tissues and the central nervous system, but is also expressed at high levels in the liver.

REFERENCES

- Blondel, O., et al. 1993. Sequence and functional characterization of a third inositol triphosphate receptor subtype, IP3R-3, expressed in pancreatic islets, kidney, gastrointestinal tract, and other tissues. *J. Biol. Chem.* 268: 11356-11363.
- Cameron, A.M., et al. 1995. Calcineurin associated with the inositol 1,4,5-triphosphate receptor-FKBP12 complex modulates Ca²⁺ flux. *Cell* 83: 463-472.
- Raghu, P., et al. 1995. The inositol 1,4,5-triphosphate receptor expression in *Drosophila* suggests a role for IP3 signalling in muscle development and adult hemosensory functions. *Dev. Biol.* 171: 564-577.
- Zhang, S.X., et al. 1995. *In situ* hybridization of mRNA expression for IP3 receptor and IP3-3-kinase in rat brain after transient focal cerebral ischemia. *Mol. Brain Res.* 32: 252-260.
- Joseph, S.K., et al. 1995. Heterologomers of type-I and type-III inositol triphosphate receptors in WB rat liver epithelial cells. *J. Biol. Chem.* 270: 23310-23316.
- Jayaraman, T., et al. 1996. Regulation of the inositol 1,4,5-triphosphate receptor by tyrosine phosphorylation. *Science* 272: 1492-1494.

CHROMOSOMAL LOCATION

Genetic locus: *Itpr3* (mouse) mapping to 17 A3.3.

PRODUCT

IP3R-III 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IP3R-III shRNA Plasmid (m): sc-42478-SH and IP3R-III shRNA (m) Lentiviral Particles: sc-42478-V as alternate gene silencing products.

For independent verification of IP3R-III (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-42478A, sc-42478B and sc-42478C.

RESEARCH USE

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

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

IP3R-III siRNA (m) is recommended for the inhibition of IP3R-III 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 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 IP3R-III gene expression knockdown using RT-PCR Primer: IP3R-III (m)-PR: sc-42478-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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