SANTA CRUZ BIOTECHNOLOGY, INC.

Type II 4-phosphatase siRNA (m): sc-39093

BACKGROUND

The inositol polyphosphate 4-phosphatases selectively remove the phosphate from the 4-position of various phosphatidylinositols, which generate second messengers in response to extracellular signals. Both the Type I and Type II 4-phosphatases catalyze the hydrolysis of phosphatidylinositol 3,4-bisphosphate, inositol 1,3,4-trisphosphate, and inositol 3,4-bisphosphate. Type I and Type II 4-phosphatases are both alternatively spliced into two isoforms, α and β, which have been detected in human platelets, rat brain, heart, skeletal muscle and spleen; and all isoforms contain a conserved motif CKSAKDRT, which contains the active site consensus sequence C-X5-R. Both Type I and II 4-phosphatases are thought to regulate the level of intracellular calcium by acting as signal terminating enzymes.

REFERENCES

1. Bansal, V.S., et al. 1990. The isolation and characterization of inositol polyphosphate 4-phosphatase. J. Biol. Chem. 265: 1806-1811.
2. Norris, F.A., et al. 1995. The isolation and characterization of cDNA encoding human and rat brain inositol polyphosphate 4-phosphatase. J. Biol. Chem. 270: 16128-16133.
3. Norris, F.A., et al. 1997. Inositol polyphosphate 4-phosphatase is inactivated by calpain-mediated proteolysis in stimulated human platelets. J. Biol. Chem. 272: 10987-10989.
4. Norris, F.A., et al. 1997. The cDNA cloning and characterization of inositol polyphosphate 4-phosphatase type II. Evidence for conserved alternative splicing in the 4-phosphatase family. J. Biol. Chem. 272: 23859-23864.

CHROMOSOMAL LOCATION

Genetic locus: Inpp4b (mouse) mapping to 8 C2.

PRODUCT

Type II 4-phosphatase 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 Type II 4-phosphatase shRNA Plasmid (m): sc-39093-SH and Type II 4-phosphatase shRNA (m) Lentiviral Particles: sc-39093-V as alternate gene silencing products.

For independent verification of Type II 4-phosphatase (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-39093A, sc-39093B and sc-39093C.

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

Type II 4-phosphatase siRNA (m) is recommended for the inhibition of Type II 4-phosphatase 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 Type II 4-phosphatase gene expression knockdown using RT-PCR Primer: Type II 4-phosphatase (m)-PR: sc-39093-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. Ota, H., et al. 2010. Induction of endothelial nitric oxide synthase, SIRT1, and catalase by statins inhibits endothelial senescence through the Akt pathway. Arterioscler. Thromb. Vasc. Biol. 30: 2205-2211.

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.