SANTA CRUZ BIOTECHNOLOGY, INC.

Type II 5-phosphatase siRNA (m): sc-39097

BACKGROUND

The inositol polyphosphate 5-phosphatases selectively remove the phosphate from the 5-position of various phosphatidylinositols, which generate second messengers in response to extracellular signals. The type I inositol polyphosphate 5-phosphatase is predominantly expressed in heart, brain, skeletal muscle, and human placenta. The 5-phosphatase associates with 14-3-3 ζ, and, in turn, activates the hydrolysis of inositol 1,4,5-trisphosphate and inositol 1,3,4,5-tetrakisphosphate. The type II inositol polyphosphate 5-phosphatase encodes a full length protein and a splice variant, which is the predominant form. The 5-phosphatase is ubiquitously expressed, and hydrolyzes inositol 1,4,5-trisphosphate, inositol 1,3,4,5-tetrakisphosphate, and phosphatidylinositol 4,5-bisphosphate. Both type I and II 5-phosphatases are thought to regulate the level of intracellular calcium by acting as signal terminating enzymes.

REFERENCES

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2. Laxminarayan, K.M., et al. 1994. Characterization of a cDNA encoding the 43 kDa membrane-associated inositol-polyphosphate 5-phosphatase. J. Biol. Chem. 269: 17305-17310.
3. Speed, C.J., et al. 1995. Tissue distribution and intracellular localisation of the 75 kDa inositol polyphosphate 5-phosphatase. Eur. J. Biochem. 234: 216-224.
4. Mitchell, C.A., et al. 1996. Regulation of second messengers by the inositol polyphosphate 5-phosphatases. Biochem. Soc. Trans. 24: 994-1000.
5. Campbell, J.K., et al. 1997. Activation of the 43 kDa inositol polyphosphate 5-phosphatase by 14-3-3ζ. Biochemistry 36: 15363-15370.
6. Zhang, X., et al. 1998. Phosphatidylinositol signalling reactions. Semin. Cell Dev. Biol. 9: 153-160.
7. Erneux, C., et al. 1998. The diversity and possible functions of the inositol polyphosphate 5-phosphatases. Biochim. Biophys. Acta 1436: 185-199.

CHROMOSOMAL LOCATION

Genetic locus: Inpp5b (mouse) mapping to 4 D2.2.

PRODUCT

Type II 5-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 5-phosphatase shRNA Plasmid (m): sc-39097-SH and Type II 5-phosphatase shRNA (m) Lentiviral Particles: sc-39097-V as alternate gene silencing products.

For independent verification of Type II 5-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-39097A, sc-39097B and sc-39097C.

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 5-phosphatase siRNA (m) is recommended for the inhibition of Type II 5-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 5-phosphatase gene expression knockdown using RT-PCR Primer: Type II 5-phosphatase (m)-PR: sc-39097-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.

PROTOCOLS

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