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PP2C ϵ siRNA (m): sc-152397

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine protein phosphatases. The PP2C group of serine/threonine phosphatases are divided into subclasses according to their requirement for magnesium substrate, their structure and by insensitivity to okadaic acid. PP2C ϵ (protein phosphatase 2C isoform ϵ), also known as protein phosphatase 1L, is a 360 amino acid membrane protein that acts as a suppressor of the JNK signaling pathways by dephosphorylating Tak1 and ASK 1. PP2C ϵ is ubiquitously expressed, with highest levels found in lung, heart, placenta, kidney, pancreas and liver. There are two isoforms of PP2C ϵ that are produced as a result of alternative splicing events. The gene encoding PP2C ϵ may be linked to disease traits that are associated with metabolic syndromes, such as obesity.

REFERENCES

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3. Hanada, M., et al. 2001. Regulation of the TAK1 signaling pathway by protein phosphatase 2C. *J. Biol. Chem.* 276: 5753-5759.
4. Jin, F., et al. 2004. Molecular cloning and characterization of a novel human protein phosphatase 2C cDNA (PP2C ϵ^*). *Mol. Biol. Rep.* 31: 197-202.
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6. Chen, Y., et al. 2008. Variations in DNA elucidate molecular networks that cause disease. *Nature* 452: 429-435.
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CHROMOSOMAL LOCATION

Genetic locus: Ppm1l (mouse) mapping to 3 E1.

PRODUCT

PP2C ϵ 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 PP2C ϵ shRNA Plasmid (m): sc-152397-SH and PP2C ϵ shRNA (m) Lentiviral Particles: sc-152397-V as alternate gene silencing products.

For independent verification of PP2C ϵ (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-152397A, sc-152397B and sc-152397C.

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

PP2C ϵ siRNA (m) is recommended for the inhibition of PP2C ϵ 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 PP2C ϵ gene expression knockdown using RT-PCR Primer: PP2C ϵ (m)-PR: sc-152397-PR (20 μ l). 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.