

POPX1 siRNA (m): sc-62843

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. POPX1, also designated partner of PIX 1, PPM1E (protein phosphatase 1E) or PP2CH, and POPX2, also designated partner of PIX 2, PPM1F (protein phosphatase 1F), CaMKPase (CaM-kinase phosphatase), or FEM-2, belong to the PP2C family of serine/threonine phosphatases. Members of the PP2C family are negative regulators of cell stress response pathways. POPX2 is a ubiquitously expressed protein and POPX1 is predominantly expressed in brain and testis. POPX1 and POPX2 specifically interact with PIX (PAK interacting exchange factor) proteins and negatively regulate the activity of α PAK, a protein kinase that can lead to the breakdown of Actin stress fibers and other morphological changes. POPX2 can also interact with and regulate CaMKII activity. Overexpression of POPX2 can result in caspase-dependent apoptosis.

REFERENCES

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PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Ppm1e (mouse) mapping to 11 C.

PRODUCT

POPX1 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 POPX1 shRNA Plasmid (m): sc-62843-SH and POPX1 shRNA (m) Lentiviral Particles: sc-62843-V as alternate gene silencing products.

For independent verification of POPX1 (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-62843A, sc-62843B and sc-62843C.

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

POPX1 siRNA (m) is recommended for the inhibition of POPX1 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 POPX1 gene expression knockdown using RT-PCR Primer: POPX1 (m)-PR: sc-62843-PR (20 μl). Annealing temperature for the primers should be $55-60^{\circ}\text{C}$ and the extension temperature should be $68-72^{\circ}\text{C}$.

RESEARCH USE

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