

Sds22 siRNA (h): sc-94837

BACKGROUND

In eukaryotes, the phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the protein phosphatases. In general, the protein phosphatase 1 (PP1) holoenzyme is a trimeric complex composed of a regulatory subunit, a variable subunit and a catalytic subunit. Sds22, also known as PPP1R7 (protein phosphatase 1, regulatory (inhibitor) subunit 7), is a 360 amino acid protein that localizes to the nucleus and contains ten LRR (leucine rich) repeats. Expressed in a variety of tissues, Sds22 functions as a regulatory subunit of the PP1 complex, suggesting a role in protein regulation throughout the cell. Multiple isoforms of Sds22 exist due to alternative splicing events.

REFERENCES

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- Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602877. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Ceulemans, H., et al. 1999. Structure and splice products of the human gene encoding Sds22, a putative mitotic regulator of protein phosphatase 1. *Eur. J. Biochem.* 262: 36-42.
- Ceulemans, H., et al. 2002. Binding of the concave surface of the Sds22 superhelix to the $\alpha 4/\alpha 5/\alpha 6$ -triangle of protein phosphatase 1. *J. Biol. Chem.* 277: 47331-47337.
- Tran, H.T., et al. 2002. Detection of multiple splice variants of the nuclear protein phosphatase 1 regulator Sds22 in rat liver nuclei. *Biochem. Cell Biol.* 80: 811-815.
- Lesage, B., et al. 2007. A complex of catalytically inactive protein phosphatase 1 sandwiched between Sds22 and inhibitor-3. *Biochemistry* 46: 8909-8919.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R7 (human) mapping to 2q37.3.

PRODUCT

ds22 siRNA (h) 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 Sds22 shRNA Plasmid (h): sc-94837-SH and Sds22 shRNA (h) Lentiviral Particles: sc-94837-V as alternate gene silencing products.

For independent verification of Sds22 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-94837A, sc-94837B and sc-94837C.

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

Sds22 siRNA (h) is recommended for the inhibition of Sds22 expression in human 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.

GENE EXPRESSION MONITORING

Sds22 (B-6): sc-398864 is recommended as a control antibody for monitoring of Sds22 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Sds22 gene expression knockdown using RT-PCR Primer: Sds22 (h)-PR: sc-94837-PR (20 μ l, 582 bp). 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.