

Selenoprotein P siRNA (h): sc-40930

BACKGROUND

Selenium is an essential trace element that is incorporated as selenocysteine into the primary structure of selenoproteins. Nutritional deficiency of selenium decreases selenoprotein concentrations and leads to pathologic conditions. Most of the known selenoproteins are members of the glutathione peroxidase or iodothyronine deiodinase families. Selenoprotein P (SEPP1) is a major selenoprotein that is not a member of those families. It is an extracellular glycoprotein that is present in several isoforms and is the only selenoprotein known to contain multiple selenocysteine residues. Selenoprotein P is a heparin-binding protein that appears to be associated with endothelial cells and has been implicated as an oxidant defense in the extracellular space. Although there is evidence of several isoforms of the protein, all of them share the same amino-terminal sequence and therefore are likely products of the same gene. The gene which encodes Selenoprotein P maps to human chromosome 5p12.

REFERENCES

1979. Observations on effect of sodium selenite in prevention of Keshan disease. *Chin. Med. J.* 92: 471-476.
- Hill, K.E., et al. 1993. Conserved nucleotide sequences in the open reading frame and 3' untranslated region of Selenoprotein P mRNA. *Proc. Natl. Acad. Sci. USA* 90: 537-541.
- Hill, K.E., et al. 1996. Human Selenoprotein P gene maps to 5q31. *Genomics* 36: 550-551.
- Chittum, H.S., et al. 1996. Multiple forms of Selenoprotein P in rat plasma. *Arch. Biochem. Biophys.* 325: 124-128.

CHROMOSOMAL LOCATION

Genetic locus: SEPP1 (human) mapping to 5p12.

PRODUCT

Selenoprotein P 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 Selenoprotein P shRNA Plasmid (h): sc-40930-SH and Selenoprotein P shRNA (h) Lentiviral Particles: sc-40930-V as alternate gene silencing products.

For independent verification of Selenoprotein P (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-40930A, sc-40930B and sc-40930C.

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

Selenoprotein P siRNA (h) is recommended for the inhibition of Selenoprotein P 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

Selenoprotein P (B-9): sc-376858 is recommended as a control antibody for monitoring of Selenoprotein P 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 Selenoprotein P gene expression knockdown using RT-PCR Primer: Selenoprotein P (h)-PR: sc-40930-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Jung, T.W., et al. 2019. Protectin DX ameliorates palmitate-induced hepatic Insulin resistance through AMPK/SIRT1-mediated modulation of fetuin-A and SeP expression. *Clin. Exp. Pharmacol. Physiol.* 46: 898-909.

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.