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SELENBP1 siRNA (m): sc-153324

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. SELENBP1 (selenium binding protein 1), also known as LPSB or SP56, is a 472 amino acid peripheral membrane protein that binds selenium and is implicated in detecting xenobiotics in cytoplasm. Existing as two alternatively spliced isoforms and a member of the selenium-binding protein family, SELENBP1 is likely involved in intra-Golgi protein transport, selenium-dependent cell growth inhibition and ubiquitination/deubiquitination-mediated protein degradation. SELENBP1 is highly expressed in prostate, lung, kidney, pancreas and liver, and is upregulated in the blood and brain of schizophrenia patients.

REFERENCES

1. Lanfear, J., et al. 1993. Different patterns of regulation of the genes encoding the closely related 56 kDa selenium- and acetaminophen-binding proteins in normal tissues and during carcinogenesis. *Carcinogenesis* 14: 335-340.
2. Chang, P.W., et al. 1997. Isolation, characterization, and chromosomal mapping of a novel cDNA clone encoding human selenium binding protein. *J. Cell. Biochem.* 64: 217-224.
3. Okunuki, Y., et al. 2007. Proteomic surveillance of autoimmunity in Behcet's disease with uveitis: selenium binding protein is a novel autoantigen in Behcet's disease. *Exp. Eye Res.* 84: 823-831.
4. Kanazawa, T., et al. 2008. The utility of SELENBP1 gene expression as a biomarker for major psychotic disorders: replication in schizophrenia and extension to bipolar disorder with psychosis. *Am. J. Med. Genet. B, Neuropsychiatr. Genet.* 147B: 686-689.
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6. Jeong, J.Y., et al. 2009. Human selenium binding protein-1 (hSP56) interacts with VDU1 in a selenium-dependent manner. *Biochem. Biophys. Res. Commun.* 379: 583-588.
7. Kanazawa, T., et al. 2009. Family-based association study of SELENBP1 in schizophrenia. *Schizophr. Res.* 113: 268-272.

CHROMOSOMAL LOCATION

Genetic locus: Selenbp1 (mouse) mapping to 3 F2.1.

PRODUCT

SELENBP1 siRNA (m) is a target-specific 19-25 nt siRNA 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 SELENBP1 shRNA Plasmid (m): sc-153324-SH and SELENBP1 shRNA (m) Lentiviral Particles: sc-153324-V as alternate gene silencing products.

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

SELENBP1 siRNA (m) is recommended for the inhibition of SELENBP1 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.

GENE EXPRESSION MONITORING

SELENBP1 (G-9): sc-373726 is recommended as a control antibody for monitoring of SELENBP1 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 SELENBP1 gene expression knockdown using RT-PCR Primer: SELENBP1 (m)-PR: sc-153324-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.