

Sp110 siRNA (m): sc-76543

BACKGROUND

Sp110 (speckled 110 kDa), also known as IPR1, VOD1, IFI41 (interferon-induced protein 41, 30 kDa) or IFI75 (interferon-induced protein 75, 52 kDa), is a phosphoprotein belonging to the SP-100/SP140 family of nuclear body components. Sp110 contains an HSR domain, a PHD-type zinc finger, a SAND domain and a bromodomain and is believed to function as a transcriptional coactivator of nuclear hormone receptors. Induced by IFN- γ and all-*trans* retinoic acid, Sp110 participates in immunoprotective mechanisms against pathogens. Mutations in the gene encoding SP110 can lead to hepatic venoocclusive disease with immunodeficiency (VODI), a disease characterized by T and B cell immunodeficiency, absent tissue plasma cells, absent lymph node germinal centers and severe hypogammaglobulinemia. Due to alternative splicing events, five isoforms exist for Sp110. Isoform 3, also known as Sp110b, interacts with the Hep C core protein.

REFERENCES

1. Bloch, D.B., et al. 2000. Sp110 localizes to the PML-Sp100 nuclear body and may function as a nuclear hormone receptor transcriptional coactivator. *Mol. Cell. Biol.* 20: 6138-6146.
2. Regad, T. and Chelbi-Alix, M.K. 2001. Role and fate of PML nuclear bodies in response to interferon and viral infections. *Oncogene* 20: 7274-7286.
3. Watashi, K., et al. 2003. Modulation of retinoid signaling by a cytoplasmic viral protein via sequestration of Sp110b, a potent transcriptional corepressor of retinoic acid receptor, from the nucleus. *Mol. Cell. Biol.* 23: 7498-7509.
4. Hu, Y., et al. 2004. From mice to humans: identification of commonly deregulated genes in mammary cancer via comparative SAGE studies. *Cancer Res.* 64: 7748-7755.
5. Nicewonger, J., et al. 2004. Epstein-Barr virus (EBV) SM protein induces and recruits cellular Sp110b to stabilize mRNAs and enhance EBV lytic gene expression. *J. Virol.* 78: 9412-9422.
6. Warren, E.H., et al. 2006. An antigen produced by splicing of noncontiguous peptides in the reverse order. *Science* 313: 1444-1447.
7. Thyne, T., et al. 2006. No associations of human pulmonary tuberculosis with Sp110 variants. *J. Med. Genet.* 43: e32.

CHROMOSOMAL LOCATION

Genetic locus: Sp110 (mouse) mapping to 1 C5.

PRODUCT

Sp110 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 Sp110 shRNA Plasmid (m): sc-76543-SH and Sp110 shRNA (m) Lentiviral Particles: sc-76543-V as alternate gene silencing products.

For independent verification of Sp110 (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-76543A, sc-76543B and sc-76543C.

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

Sp110 siRNA (m) is recommended for the inhibition of Sp110 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

Sp110 (A-7): sc-376345 is recommended as a control antibody for monitoring of Sp110 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 Sp110 gene expression knockdown using RT-PCR Primer: Sp110 (m)-PR: sc-76543-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.