

SP-100 siRNA (h): sc-41032

BACKGROUND

The human SP100 gene encodes an autoantigen that co-localizes with PML and NDP52 in distinct nuclear domains, called nuclear dots (NDs) or ND10 nuclear bodies. Papova-, adeno-, and herpesviruses begin their transcription and DNA-replication at NDs, which play a role in autoimmunity, viral infections and in the etiology of acute promyelocytic leukemia. SP-100 is an interferon-inducible protein that has two splice variants. One splice variant contains a highly conserved copy of the DNA-binding high mobility group 1 protein sequence, and thus represents a novel HMG-box protein. This alternatively spliced variant of SP-100 has a unique expression and localization pattern that is distinct from the SP-100 full-length protein. The SP100 protein is covalently modified by the small ubiquitin-related protein SUMO-1. SP-100 contains a functional nuclear localization signal and an ND-targeting region, which overlaps with the SP-100 homodimerization domain. The homodimerization/ND-targeting region is considered a novel protein motif, termed HSR domain. SP-100 is also found to interact with Bright (B cell regulator of IgH transcription), which in lymphoid cells also interacts with LYSP100/SP140, the lymphoid-restricted homolog of SP100.

REFERENCES

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- Weichenhan, D., et al. 1997. Structure and expression of the murine SP-100 nuclear dot gene. *Genomics* 43: 298-306.
- Seeler, J.S., et al. 1998. Interaction of SP-100 with HP1 proteins: a link between the promyelocytic leukemia-associated nuclear bodies and the chromatin compartment. *Proc. Natl. Acad. Sci. USA* 95: 7316-7321.
- Sternsdorf, T., et al. 1999. The nuclear dot protein SP-100, characterization of domains necessary for dimerization, subcellular localization, and modification by small ubiquitin-like modifiers. *J. Biol. Chem.* 274: 12555-12566.
- Guldner, H.H., et al. 1999. Splice variants of the nuclear dot-associated SP-100 protein contain homologies to HMG-1 and a human nuclear phosphoprotein-box motif. *J. Cell Sci.* 112: 733-747.
- Bell, P., et al. 2000. Lytic but not latent replication of Epstein-Barr virus is associated with PML and induces sequential release of nuclear domain 10 proteins. *J. Virol.* 74: 1800-1810.

CHROMOSOMAL LOCATION

Genetic locus: SP100 (human) mapping to 2q37.1.

PRODUCT

SP-100 siRNA (h) 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 SP-100 shRNA Plasmid (h): sc-41032-SH and SP-100 shRNA (h) Lentiviral Particles: sc-41032-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

SP-100 siRNA (h) is recommended for the inhibition of SP-100 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

SP-100 (1G6): sc-293458 is recommended as a control antibody for monitoring of SP-100 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 SP-100 gene expression knockdown using RT-PCR Primer: SP-100 (h)-PR: sc-41032-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.