

SP-100 siRNA (m): sc-41033

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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3. 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.
4. 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.
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6. 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.
7. Zong, D.T., et al. 2000. Regulation of matrix attachment region-dependent, lymphocyte-restricted transcription through differential localization within promyelocytic leukemia nuclear bodies. *EMBO J.* 19: 4123-4133.
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PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

Genetic locus: Sp100 (mouse) mapping to 1 C5.

PRODUCT

SP-100 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 SP-100 shRNA Plasmid (m): sc-41033-SH and SP-100 shRNA (m) Lentiviral Particles: sc-41033-V as alternate gene silencing products.

For independent verification of SP-100 (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-41033A, sc-41033B and sc-41033C.

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 (m) is recommended for the inhibition of SP-100 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SP-100 gene expression knockdown using RT-PCR Primer: SP-100 (m)-PR: sc-41033-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.