

HIC-1 siRNA (h): sc-37712

BACKGROUND

Hypermethylated in cancer (HIC-1) was originally identified as a target of p53-induced gene expression. HIC-1 is deleted in the genetic disorder Miller-Dieker syndrome (MDS), and the expression of HIC-1 is also frequently suppressed in leukemia and various cancers due to the hypermethylation of specific DNA regions and the resulting transcriptional silencing. These and other studies indicate that HIC-1 acts as a putative tumor suppressor protein that mediates transcriptional repression. HIC-1 is ubiquitously expressed in adult tissues and its structure is defined by five zinc fingers and an N-terminal broad complex POZ (or BTB) domain. The BTB/POZ domain mediates homomeric and heteromeric POZ-POZ interactions and is common to transcriptional regulators involved in chromatin modeling. In several BTB/POZ containing proteins, including Bcl-6 and the promyelocytic leukemia zinc-finger (PLZF) oncoprotein, this domain interacts with the SMRT/N-CoR-mSin3A HDAC complex and is directly involved in repressing and silencing gene transcription. When this domain is deleted, as with the oncogenic PLZF-RAR chimera of promyelocytic leukemias, this transcriptional repression is attenuated. Conversely, HIC-1 does not interact with components of the HDAC complex, suggesting that HIC-1-induced transcriptional repression is unassociated with the POZ/BTB domain.

REFERENCES

1. Wales, M.M., et al. 1995. p53 activates expression of HIC-1, a new candidate tumour suppressor gene on 17p13.3. *Nat. Med.* 1: 570-577.
2. Ahmad, K.F., et al. 1998. Crystal structure of the BTB domain from PLZF. *Proc. Natl. Acad. Sci. USA* 95: 12123-12128.
3. Huynh, K.D., et al. 1998. The Bcl-6 POZ domain and other POZ domains interact with the co-repressors N-CoR and SMRT. *Oncogene* 17: 2473-2484.

CHROMOSOMAL LOCATION

Genetic locus: HIC1 (human) mapping to 17p13.3.

PRODUCT

HIC-1 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 HIC-1 shRNA Plasmid (h): sc-37712-SH and HIC-1 shRNA (h) Lentiviral Particles: sc-37712-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

HIC-1 siRNA (h) is recommended for the inhibition of HIC-1 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

HIC-1 (H-6): sc-271499 is recommended as a control antibody for monitoring of HIC-1 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 HIC-1 gene expression knockdown using RT-PCR Primer: HIC-1 (h)-PR: sc-37712-PR (20 μ l, 461 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, B., et al. 2009. Requirement for chromatin-remodeling complex in novel tumor suppressor HIC-1-mediated transcriptional repression and growth control. *Oncogene* 28: 651-661.
2. Zheng, S., et al. 2021. LRP8 activates Stat3 to induce PD-L1 expression in osteosarcoma. *Tumori* 107: 238-246.

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.