SANTA CRUZ BIOTECHNOLOGY, INC.

NIF-1 siRNA (h): sc-75914

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. The majority of zinc-finger proteins contain a Krüppel-type DNA binding domain and a KRAB domain, which is thought to interact with KAP1, thereby recruiting histone modifying proteins. NIF-1 (NRC-interacting factor 1), also known as NIF2 or ZNF335 (zinc finger protein 335), is a 1,342 amino acid nuclear protein belonging to the Krüppel C_2H_2-type zinc-finger protein family and exists as two alternatively spliced isoforms. NIF-1 is highly expressed in skeletal muscle, thymus, placenta and blood and contains 13 C_2H_2-type zinc fingers. NIF-1 may regulate transcriptional activation through PRIP (peroxisome proliferator-activated receptor-interacting protein), a nuclear receptor coactivator that interacts with members of the steroid hormone and thyroid hormone/retinoid receptor subfamilies in a ligand-dependent or ligand-enhanced manner. NIF-1 is phosphorylated upon DNA damage by either ATM or ATR.

REFERENCES

1. Kato, N., Shimotohno, K., VanLeeuwen, D. and Cohen, M. 1990. Human proviral mRNAs down regulated in choriocarcinoma encode a zinc finger protein related to Krüppel. Mol. Cell. Biol. 10: 4401-4405.
2. Thiesen, H.J. 1990. Multiple genes encoding zinc finger domains are expressed in human T cells. New Biol. 2: 363-374.
3. Huebner, K., Druck, T., Croce, C.M. and Thiesen, H.J. 1991. Twenty-seven nonoverlapping zinc finger cDNAs from human T cells map to nine different chromosomes with apparent clustering. Am. J. Hum. Genet. 48: 726-740.
4. Zhu, Y., Kan, L., Qi, C., Kanwar, Y.S., Yeldandi, A.V., Rao, M.S. and Reddy, J.K. 2000. Isolation and characterization of peroxisome proliferator-activated receptor (PPAR) interacting protein (PRIP) as a coactivator for PPAR. J. Biol. Chem. 275: 13510-13516.
5. Mahajan, M.A., Murray, A. and Samuels, H.H. 2002. NRC-interacting factor 1 is a novel cotransducer that interacts with and regulates the activity of the nuclear hormone receptor coactivator NRC. Mol. Cell. Biol. 22: 6883-6894.
6. Mahajan, M.A., Murray, A., Levy, D. and Samuels, H.H. 2007. Nuclear receptor coregulator (NRC): mapping of the dimerization domain, activation of p53 and STAT-2, and identification of the activation domain AD2 necessary for nuclear receptor signaling. Mol. Endocrinol. 21: 1822-1834.
7. Garapaty, S., Mahajan, M.A. and Samuels, H.H. 2008. Components of the CCR4-NOT complex function as nuclear hormone receptor coactivators via association with the NRC-interacting factor NIF-1. J. Biol. Chem. 283: 6806-6816.

CHROMOSOMAL LOCATION

Genetic locus: ZNF335 (human) mapping to 20q13.12.

PROTOCOLS

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

PRODUCT

NIF-1 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NIF-1 shRNA Plasmid (h): sc-75914-SH and NIF-1 shRNA (h) Lentiviral Particles: sc-75914-V as alternate gene silencing products.

For independent verification of NIF-1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-75914A, sc-75914B and sc-75914C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

NIF-1 siRNA (h) is recommended for the inhibition of NIF-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 µM in 66 µl. 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 NIF-1 gene expression knockdown using RT-PCR Primer: NIF-1 (h)-PR: sc-75914-PR (20 µl). 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.