

DDIAS siRNA (h): sc-96450

BACKGROUND

DDIAS (DNA damage-induced apoptosis suppressor), also known as NOXIN or C11orf82, is a 998 amino acid protein expressed as two isoforms due to alternative splicing and containing a DNA-binding C-domain which mediates DNA replication and repair. DDIAS is a potential oncogene with DNA copy number amplification, and is highly expressed in colorectal and lung cancer tissues. DDIAS expression is high during S phase in both cancer and normal cells, and can be induced by ultraviolet irradiation. Overexpression of DDIAS has been associated with cellular proliferation, colony formation, cellular migration and *in vivo* tumorigenicity. Knockdown of DDIAS expression has been found to induce apoptosis through activation of p38 mitogen-activated protein kinase (MAPK)/p53. DDIAS has been found to interact with DNA polymerase alpha and may promote *de novo* DNA synthesis by promoting DNA polymerase-primase complex formation.

REFERENCES

1. Kimura, K., et al. 2006. Diversification of transcriptional modulation: large-scale identification and characterization of putative alternative promoters of human genes. *Genome Res.* 16: 55-65.
2. Nakaya, N., et al. 2007. Noxin, a novel stress-induced gene involved in cell cycle and apoptosis. *Mol. Cell. Biol.* 27: 5430-5444.
3. Comuzzie, A.G., et al. 2012. Novel genetic loci identified for the pathophysiology of childhood obesity in the Hispanic population. *PLoS ONE* 7: e51954.
4. Yu, C.C., et al. 2013. VCP phosphorylation-dependent interaction partners prevent apoptosis in *Helicobacter pylori*-infected gastric epithelial cells. *PLoS ONE* 8: e55724.
5. Won, K.J., et al. 2014. Human Noxin is an anti-apoptotic protein in response to DNA damage of A549 non-small cell lung carcinoma. *Int. J. Cancer* 134: 2595-2604.
6. Zhang, Z.Z., et al. 2015. NOXIN as a cofactor of DNA polymerase-primase complex could promote hepatocellular carcinoma. *Int. J. Cancer* 137: 765-775.

CHROMOSOMAL LOCATION

Genetic locus: DDIAS (human) mapping to 11q14.1.

PRODUCT

DDIAS 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DDIAS shRNA Plasmid (h): sc-96450-SH and DDIAS shRNA (h) Lentiviral Particles: sc-96450-V as alternate gene silencing products.

For independent verification of DDIAS (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-96450A, sc-96450B and sc-96450C.

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

DDIAS siRNA (h) is recommended for the inhibition of DDIAS 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DDIAS gene expression knockdown using RT-PCR Primer: DDIAS (h)-PR: sc-96450-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2017. Noxin promotes proliferation of breast cancer cells via P38-ATF2 signaling pathway. *Tumour Biol.* 39: 1010428317705515.
2. Liu, N., et al. 2017. DDIAS promotes invasion and proliferation of non-small cell lung cancer and predicts poor survival of lung cancer patients. *Int. J. Clin. Exp. Pathol.* 10: 11506-11515.

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.